

A circular library stamp from the Houston Public Library. The outer ring contains the number 23456789101112131415161718192021222324252627282930. In the center, it reads "JUL 1956", "HOUSTON PUBLIC", and "LIBRARY". Below "LIBRARY" is the word "Houston, Texas".

and Chemical Specialties

• • •

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• • •

nk J. Pollnow, Jr., just elected
ident of Vestal, Inc., St. Louis
tialties firm, is a director of
Assn. He is also active in
AA (former board member)
ASTM committee on waxes.



A MAN REQUIRES SPECIAL TREATMENT!



He appreciates a pleasantly scented product just as thoroughly as does his "so-called" better half. But, generally speaking, he's terrified at the very thought of smelling "perfumy"! He buys shave creams, soaps and aerosols; talcs and after-shave lotions; hair conditioners, shampoos, tonics and brilliantines; even colognes . . . but to secure his brand allegiance requires one primary factor. The fragrance used must be one that he will unquestionably identify as *masculine*. To develop such custom-tailored odors demands not only good perfumers and modern equipment . . . but also the invaluable background that comes only with years of practical experience. For more than a century and a half, D&O has been serving the perfumed products industries of the nation with time-tested fragrances. Let our product-development laboratories help you give that sales-winning "special treatment" to your men's toiletries! Consult D&O.

Essentially for you



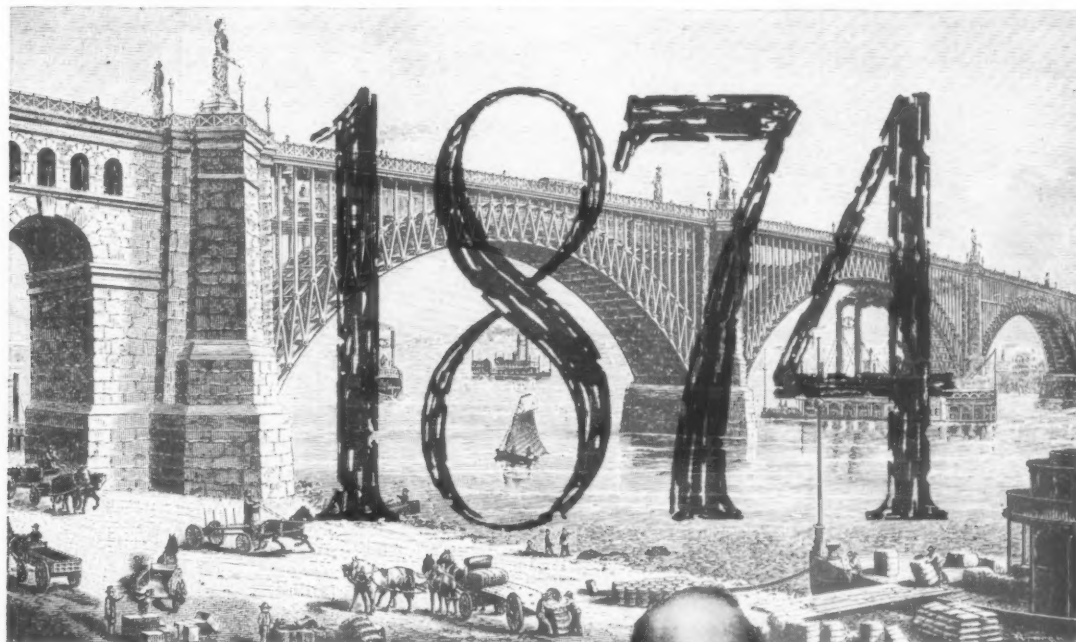
OUR 157th YEAR OF SERVICE
DODGE & OLCOTT, INC.

180 Varick Street, New York 14, N. Y.

Sales Offices in Principal Cities

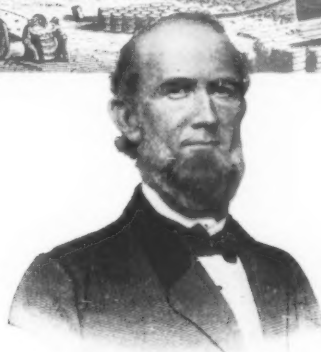
ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES • FLAVOR BASES • DRY SOLUBLE SEASONINGS

Important dates in the History of Industrial Progress



In engineering . . .

James B. Eads spanned the Mississippi River at St. Louis with the first steel-arch bridge. Named after its designer, the Eads Bridge is still regarded as an outstanding engineering achievement, is still a main artery of trans-river traffic.



.....In the history of fats and waxes

GROCO 6 — WHITE OLEINE (U.S.P. OLEIC ACID)

Titre	2° — 6°C.
Cloud Point	35° — 43°F.
Color 5¼" Lovibond Red	1 max.
Color 5¼" Lovibond Yellow	10 max.
Color Gardner 1933	2 max.
Unsaponifiable	1.0% max.
Saponification Value	199 — 204
Acid Value	198 — 203
% F.F.A. as Oleic Acid	99.5 min.
Iodine Value (WtJS)	95 max.
Refractive Index 50°C. (Average)	1.4500

Abbe announced a refractometer with heated prisms. Today, the refractive indices and spectrophotometric examinations available to the laboratory technician permit the closest possible check on fatty acid composition and uniformity. These and other quality control procedures are in everyday use in the laboratories of A. Gross & Company. They help to insure the consistent superiority of such products as GROCO 6 — WHITE OLEINE. Properties of this multiple distilled Oleic Acid are shown in the table.

Send for samples and catalog "Fatty Acids in Modern Industry".

A. GROSS & COMPANY

295 Madison Avenue, New York 17, N. Y.

Factory: Newark, N. J.

Distributors In Principal Cities

Manufacturers Since 1837



*Are you searching for
an honest appraisal*
to guide you as a
private brand
distributor

SELF-POLISHING WAXES

Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

CANDY'S SUPREME (standard)

BRIGHT BEAUTY® (standard)

CANDY'S SUPREME Special WR

SUPER CAND-DOX®

CAND-DOX® #CS

CAND-DOX® #BB

All Candy's products are available for private brand resale and are sold only through distributors except for experimental accounts in Chicago essential to research.

Beauty and
Durability

Anti-Slip

Water
Resistance

Solid
Content

Carnauba
Wax

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax... beauty and protection.

Frequent damp mopping or wet traffic can make water resistance very important. Overdoing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

The percentage of solid content is not nearly as important as the quality of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Over-waxing and resultant greater difficulty in removal for periodic maintenance may do more harm than good.

The most important features of a good wax...all-around quality of performance...are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba alone imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given quality most certainly will lead to unsatisfactory performance.

Other HIGHEST QUALITY wax products by CANDY & COMPANY

Bright Beauty WAX REMOVER & all-purpose SURFACE CLEANER

For removal of water-emulsion waxes from any floor without harmful effects. It is the perfect maintenance program wax remover and all-purpose surface cleaner. Pleasant odor, crystal clear color and thorough cleaning action with all types of equipment. Unaffected by hard freezing. Furnished ready for resale or in concentrated form for local packaging...nothing but water to buy or mix in.

Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort to a deep impressive lustre. Permits repeated repolishing with a dry cloth, thus saving many re-applications. A very economical polish of the very highest quality.

Bright Beauty PASTE WAX

Properly blended and refined from excellent quality solids and solvents that produce the best drying time and evaporation. Easy to handle, having "creamy" consistency and stability that lasts throughout storage and usage life.

Bright Beauty LIQUID (spirit) PREPARED WAXES

A complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each acts as a "dry cleaner" to keep surfaces waxed protected with a superb coating necessary for many applications such as wood and certain other types of floors; for bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a Glass Cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanness to glass. Different in color only as a Silver Polish, it polishes

to a high lustre without abrasion and can even correct the abuses of scratchy "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Does not "ball-up" and gather dirt that impregnates floors with hard spots difficult to remove...free from dusty effects. Its protective quality adds more "floor-years" to expensive ballroom floors.

Bright Beauty Heavy Duty PASTE CLEANER

Cleans and scours more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive qualities, it frees almost every surface from all foreign matter.

CONTAINER SILK SCREEN LABELING

Now you can have dramatic, colorful labeling of your private brand name on all 55, 35, 30, 20 & 15 gal. drums and 5 gal. pails. This added service is accomplished right in our plant...your inspection invited...or write for details.

Wax Specialists for over 65 years

Candy & Company, Inc.

2515 W. 35th ST., CHICAGO

SOAP

and Chemical Specialties

CONTENTS

In Brief—As the Editor Sees It	35
As the Reader Sees It	39
Carbon Soil Removal	41
By P. T. Vitale, J. Ross and A. M. Schwartz	
TGA Meets, Elects Harang	45
Soap Making Improvements (Part II)	49
By F. V. Wells	
Cosmetic Chemists Meet	53
TGA Scientific Section Meets	55
Centrifuges in Soap Making	79
Surveys Highlight CSMA Meeting	141
Aerosol Survey for 1955	155
Insecticide Sales Up in 1955	159
Dispensing Powders from Pressurized Containers	164
By Victor DiGiacomo	
Non-Flammable Paint Strippers (Part II)	175
By Bernard Berkeley, Daniel Schoenholz and James Adams	
Production Section	79
New Patents	87
Products and Processes	89
Production Clinic	91
Soap Plant Observer	95
Packaging Section	99
New Products Pictures	111
New Trade Marks	117
Pressure Packaging	121
Chemical Specialties Section	123
Classified Advertising	199
Coming Meetings	206
Advertisers' Index	207
Tale Ends	208

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since 1934

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SOAP and CHEMICAL SPECIALTIES

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Their creative genius is attested by the many fragrances that are proven international successes. These formulations have earned for our laboratory technicians both here and abroad an inspiring accolade of confidence.

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JUNE, 1956



From soap to nuts
*through a new intermediate—***aero***
 Glycolonitrile

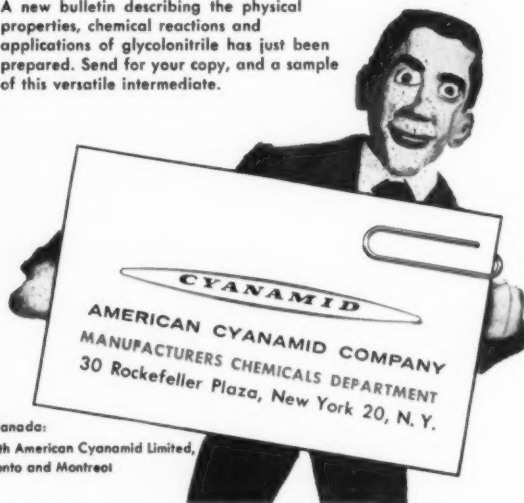
Making surface active agents or brightening nickel-plated nuts is all in a day's work for AERO Glycolonitrile.

N-substituted sarcosinates made from glycolonitrile are gaining importance as surfactants. Lauroylsarcosine provides antienzyme action in toothpaste, makes an excellent shampoo base, provides dispersion and wetting in aerosol formulations. Stearoylsarcosine shows great promise for shaving cream formulations and synthetic bar soaps. Another derivative, glycine, may be used as a component of dentifrices and as a pharmaceutical intermediate.

Glycolonitrile reacts with ethylenediamine to produce ethylenediamine tetra-acetic acid (EDTA), the salts of which are excellent sequestering and metal complexing agents. Glycolonitrile can be used to modify vinyl monomers, such as preparing cyano methyl esters of the acrylic monomers. Glycinamide, prepared from glycolonitrile, can be condensed with formaldehyde to make a thermosetting resin useful in laminates. It may also be trimerized to pyrimidine, which has properties useful as an epoxy resin curing agent. Glycolonitrile itself is an organic cyanide brightener in the electro-deposition of nickel, and a direct source of cyanide.

*Trademark

A new bulletin describing the physical properties, chemical reactions and applications of glycolonitrile has just been prepared. Send for your copy, and a sample of this versatile intermediate.



In Canada:
 North American Cyanamid Limited,
 Toronto and Montreal



Tannery calls Merchants' Milwaukee office. A large order of assorted chemicals is needed immediately. Products of six different manufacturers are included. Can Merchants make rush delivery?



184-piece order is made up from stock at Merchants' adjoining warehouse. A large inventory is maintained to fill customers' daily needs.

rush order:

TEN TONS OF ASSORTED CHEMICALS



Delivery is made an hour and 30 minutes from the time order was placed. Ten tons, 184 pieces — delivered immediately from a single source!

Merchants makes delivery in an hour and a half!

Each Merchants' office is a single, reliable source for a wide assortment of chemicals. Because stocks at Merchants' warehouses are maintained with one consideration in mind — customer service — orders for assorted chemicals are filled rapidly and completely. For 35 years Merchants Chemical has given industrial chemical users this type of specialized service. Products include acids, alkalis, fungicides, surfactants, chlorinated solvents, emulsifiers, laundry compounds, soaps, dry ice and chemical specialties.



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SALES OFFICES AND WAREHOUSES: CHICAGO • CINCINNATI • DENVER • LOUISVILLE • MILWAUKEE • MINNEAPOLIS • NEW YORK • OMAHA
STOCK POINTS: ALBUQUERQUE, N. M. • ERWIN, TENN. • S. NORWALK, CONN.

BRIEFS

for caustic soda buyers

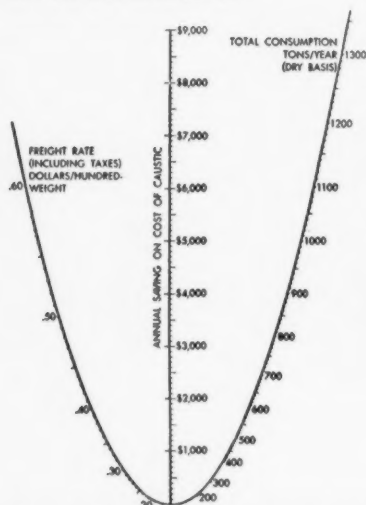
50% or 73%?

Which flake size?

Choosing a supplier

50% to 73%— some save, some don't

To estimate quickly whether you can save by switching from 50% to 73% liquid caustic soda, simply draw a line on this nomograph.



Start at your freight rate and draw to your annual consumption in tons, dry basis. Your approximate savings on freight will appear where you intersect the center line.

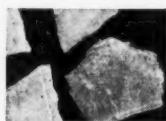
From this figure, subtract annual depreciation for dilution equipment. (We'll be glad to advise you on cost of this equipment.)

If you still show a saving, it would be wise to consider the big switch seriously.

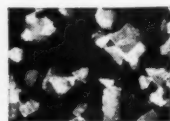
For more facts on the economics of 50% and 73% caustic, check the coupon for a copy of our pocket-size *Caustic Soda Buyer's Guide*.

And for specific technical advice centered on *your* requirements, just phone or write the nearest Hooker sales office.

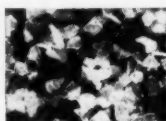
Especially good for repackaging in cleansers and other specialties are these four sizes of Hooker flake caustic soda, all shown actual size.



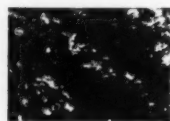
REGULAR FLAKE



FINE FLAKE



CRYSTAL FLAKE



POWDERED

"Regular," "fine," and "crystal" sizes are nondusting.

With these flakes, you're sure of actually *getting* the size you order. In a tightly-controlled flaking-screening operation, we make the flakes just thick enough to stand up well and stay the same size in transit.

Regular flake is shipped in 100-lb. and 400-lb. steel drums; the other sizes in 450-lb. steel drums.

Choosing a supplier

Service is a large part of what you pay for when you buy caustic soda.

Here are some important "service" points to look for when you're considering a source of supply. (As a Hooker customer, you enjoy *all* of them.)

1. Supply security. How flexible are your supply lines? For instance, a supplier with plants and stock points on deep water may be able to offer you a choice of rail or water delivery. This can assure you steady supply in case of rail service interruption.

2. Realistic contracting. Your agreements with your supplier should realistically reflect your expected needs *and* the supplier's ability to consistently deliver the tonnage you need. Best yardstick for measuring this ability is a supplier's performance record. Hooker, for example, has an unbroken 50-year record of fulfilling contract commitments.

3. Engineering help. A supplier's engineering staff can help you set up a new caustic handling system—or revamp an old one—with advice, and with actual design assistance.

Check items you'd like to receive:

☐ *Caustic Soda Buyer's Guide.* Lists advantages of 50% and 73% solutions; comparative costs; capacities of tank cars and other containers; useful shipping information.

☐ Technical data on liquid, flake, and solid caustic soda.

FOR INFORMATION on these Hooker chemicals used in soaps, detergents, cleansers, polishes and other specialties, check here:

- ☐ Cyclohexanol
- ☐ ortho-Dichlorobenzene
- ☐ para-Dichlorobenzene
- ☐ Nialk Caustic Potash
- ☐ Sodium Sulfide

Clip and mail to us with your name, title, company address.

When requesting samples, please use business letterhead to speed delivery.



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106 Union Street, Niagara Falls, N. Y.

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A LIQUID ALKYL ARYL SULFONATE

with
**HIGHER FOAM • GREATER
VISCOSITY • LIGHTER COLOR
• MILD ODOR •**

**Outstanding
FOAMING AGENT
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NINEX 300 is a concentrated liquid alkyl aryl sulfonate (60% triethanolamine dodecyl benzene sulfonate). It is exceptionally efficient when used as a foaming agent and detergent in

- CARWASHES
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- INDUSTRIAL CLEANERS
- SHAMPOOS

To broaden the usefulness of NINEX 300 for these and other similar uses, NINOL research has developed new, improved manufacturing procedures which add greatly to NINEX 300's already attractive features. You can get a better product, and better production, with improved NINEX 300—with higher foam, greater viscosity, lighter color and mild odor . . and you get all of these advantages *at low cost.*

Why not find out all about what NINEX 300—now better than ever—can do for you?

Send for
Data Sheets,
Samples,
Today..

SEND THIS COUPON NOW!

NINOL LABORATORIES, INC.,
DEPT. 5,
PRUDENTIAL PLAZA
CHICAGO 1, ILLINOIS

Gentlemen:

Please send working samples of
and complete information about
the improved NINEX 300.

Signed _____

Co. _____

Street _____

City & State _____



Detergents—
—Emulsifiers

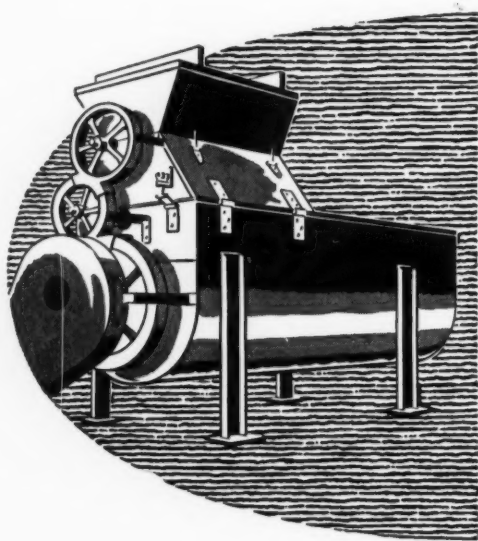
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In Canada: Chemical Developments of Canada Ltd., 420 LaSalle Street W., Montreal 1, Quebec



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Write today to our Industrial Department for samples and technical data. *There's no cost or obligation!*

Or, get in touch with your local C.P. Industrial representative.

FREE! New 1956 Handy Soap and Synthetic Detergent Buying Guide. Tells you the right product for every purpose.



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300 Park Ave., New York 22, N. Y.

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Marchon

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ALKYL ARYL SODIUM SULPHONATES

based on
tetrapropylene polymer

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brand



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*80% dodecyl benzene
sodium sulphonate*

* **NANSA S. POWDER**

*40% spray dried dodecyl
benzene sodium sulphonate*

* **NANSA LIQUIDS**

*built alkyl aryl sodium
sulphonate liquids*

* **NANSA U.C. POWDER**

*bead type totally spray dried
synthetic detergent containing
molecularly condensed phosphates,
carboxy-methyl-cellulose,
silicates, foam builders
etc.*

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ORGANIC DIVISION: Fatty alcohol sulphates (EMPICOLS), emulsifiers (EMPILANS), self-emulsifying waxes (EMPIWAXES), alkyl aryl sulphonates (NANSAS) and other detergent bases, additives and emulsifiers in powder, paste and liquid forms.

INORGANIC DIVISION: phosphoric acid and complex phosphates.



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When you use PQ silicates in your detergent slurries, you protect your equipment against corrosion. Just as important, you add the sales advantage of protecting consumer's tableware, appliances and kitchen equipment.

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 125th ANNIVERSARY	1831-1956 	PQ SILICATE OF SODA
	METSO DETERGENTS	

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Associates: Philadelphia Quartz Co. of Calif. Berkeley & Los Angeles, Calif., Tacoma, Wash.; National Silicates Limited, Toronto, Canada
Distributors in over 65 cities

TRADEMARKS REG. U.S. PAT. OFF.

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For liquid detergent formulations

try the raw material with the world's best references

NEOLENE 400

Neolene 400 is an established high-quality hydrocarbon that has earned a key position, not only with the world's foremost processors, but also with smaller compounders everywhere. Sulfonates produced from Neolene 400 are particularly well suited for compounding in liquid formulations. Latest sulfonation method, using SO_3 with Neolene 400, contributes to quality and production efficiency in liquid formulations. This procedure does away with handling, storing and disposing of spent sulfuric acid.

In addition to Neolene 400, you can count on Conoco for:

WATER-SOLUBLE SULFONATES—produced from Neolene 400. Available as sulfonate slurry, sulfonic acid, or in spray-dried and drum-dried forms.

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*Petrochemical know-how
from the ground up!*



CONTINENTAL OIL COMPANY

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Heiko Perfume and Cosmetic Compounds are once more available to fine perfumers.

Heine and Company has again begun to produce the quality specialties so highly prized and widely known for their unsurpassed excellence the world over.

Heine and Company is resuming full production. Mr. Frederick C. Keidel, long distinguished in the field, will be Chief Perfumer, assisted by a staff of competent perfumers and chemists. Mr. Chester Tompkins will be in charge of sales.

Now you may order superb:

Heiko-Lilac "A"

Oil of Lilac known around the world as an indispensable base for modern perfumes with the natural odor of fresh flowers.

Heiko-Jasminette White

Most widely used in cosmetic compositions.

Heiko-Pink

Respected for its retentive power, and highly recommended for all carnation compositions.

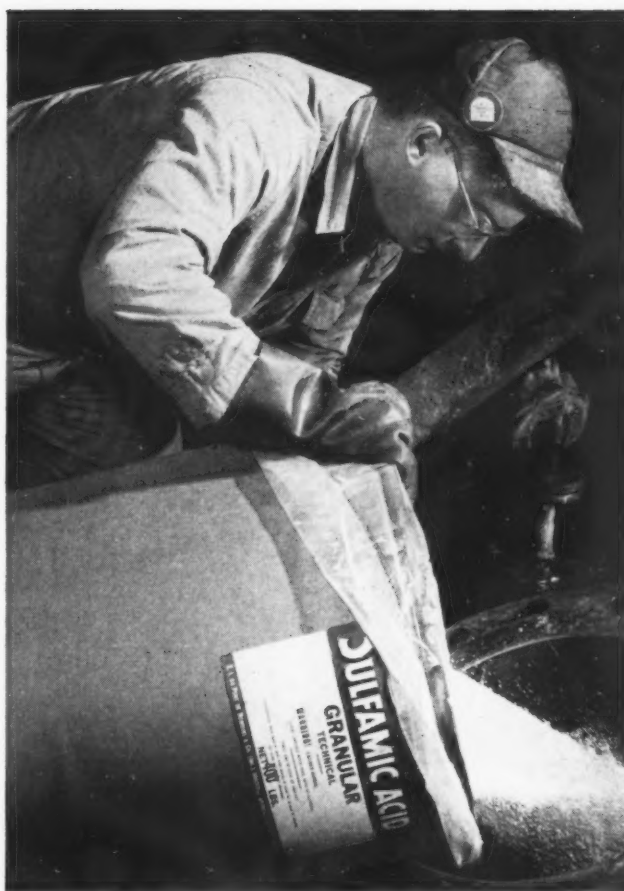
Your welcome inquiries for samples of all inimitable Heiko flower products, aromatic chemicals, and essential oils will receive our interested, prompt attention. Please let us help you meet your finest quality requirements in every detail.

HEINE & Co

601 W. 26th St., New York 1, N. Y.



SOAP and CHEMICAL SPECIALTIES



Du Pont SULFAMIC ACID

now available in
granular as well
as crystal form

Unbeatable for formulating scale removers and acid-type cleaners

The new free-flowing . . . non-caking granular sulfamic acid is another advance in the production of practical, easy-to-handle efficient acid cleaners. Sulfamic acid will handle the toughest cleaning job. Whether you are producing cleaners for copper-bottom pans, air-conditioning equipment, or boilers, sulfamic acid

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What's more, sulfamic acid eliminates special-handling procedures . . . glass breakage or acid-spilling damage . . . expense of returnable containers.

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Brick and Concrete Cleaners
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Sugar-Evaporator Descalers
Food-Processing Equipment

Dairy Milk-Stone Cleaners
Paper-Mill Felt and Wire Cleaners
Brewery Cleaning
Heat-Exchanger Cleaners

Marine Cleaners
Toilet-Bowl Cleaners
Copper Cleaners
Silver-Dip Cleaners
Stainless-Steel Cleaners

CRYSTAL GRADE. 99% active material for synthesis and chemical uses where high purity is required.

GRANULAR GRADE. A specially prepared, new, free-flowing, non-caking sulfamic acid designed for use in your formulated compounds.



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Wilmington 98, Delaware

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Firm _____

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City _____ State _____



A nonionic detergent developed especially for producers of dry cleaning materials

Dispersant NI-E is an oil-soluble liquid surfactant of the alkylphenol-ethylene oxide condensate type. It is free of inorganic salts and oil, and is essentially 100% active.

This new Oronite product was designed for the preparation of better, more thorough dry cleaning detergents. You will find Dispersant NI-E an outstanding soil-remover and suspending agent, the latter property reducing soil redeposition or greying. The low viscosity of NI-E makes it easy to use, and it will not cause yellowing of garments or rancid odors.

Specific formulations for use of NI-E are available to dry cleaning detergent producers on request. Contact the Oronite office nearest you for this information or for product data and samples.

Dispersant NI-E is another example of Oronite's ability and willingness to provide tailor-made products to fit individual requirements. NI-E is a companion product to other oil and water soluble nonionics, Dispersants NI-O and NI-W.



The world's largest producer of synthetic detergent raw materials

ORONITE CHEMICAL COMPANY

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Mercantile Securities Bldg., Dallas 1, Texas	Carew Tower, Cincinnati 2, Ohio
36 Avenue William-Favre, Geneva, Switzerland	

After Closing..

L&F Appoints Seclow

Lehn & Fink Products Corp., New York, recently named Richard S. Seclow as product manager for



Richard A. Seclow

"Lysol" disinfectant. The appointment is part of the major reorganization of the marketing division at the Lehn & Fink Division. Mr. Seclow first joined Lehn & Fink in January 1955 as assistant merchandising manager of the division.

A graduate of Rutgers University, Mr. Seclow was formerly associated with the advertising and merchandising departments of the Vick Chemical Co. Earlier he had been in the account service department of Batten, Barton, Durstine & Osborn in Cleveland for two years.

Under the new product manager system, Mr. Seclow will assume responsibilities for the coordination of all marketing activities for "Lysol," including sales, advertising, merchandising and sales promotion.

Anti-Freeze Test Coupons

Metal test coupons for laboratory bench testing of anti-freeze for corrosion in accordance with A.S.T.M. Method D 1384-55T have been developed by the Automotive

Division of the Chemical Specialties Manufacturers Assn. and are now available from CSMA. Sets of metal test coupons consist of three units or 18 specimens. One to 11 sets are \$9.00 per set, and lots of 12 sets cost \$96.00 per lot to members. Non-members of CSMA pay \$9.90 per individual set; lots of five sets are \$47.60 per lot and lots of 12 sets are \$100 per lot.

The details of the test coupons were worked out by the Automotive Division of CSMA in cooperation with A.S.T.M. Committee D-15 on Engine Anti-Freezes, of which H. R. Wolf, research laboratories division, General Motors Corp. is chairman. The new coupons are additional to the metal test coupons for testing brake fluids according to S.A.E. specifications.

The Automotive Division project was planned by and is being carried out under the supervision of C. S. Kimball of Foster D. Snell, Inc., New York.

World Pest Control Book

A 220-page "World Survey of Pest Control" by Laura G. Arrington was announced early this month by the Business and Defense Services Administration of the U. S. Department of Commerce, Washington, D. C. The book was written by Mrs. Arrington, who retired from the Department of Commerce last month, under the general supervision of Charles C. Concannon of the Department of Commerce.

Aerosol Pressure Test

A "Tentative Method for Determining the Internal Pressure of Glass Aerosol Products" has been prepared by the Aerosol Division, Scientific Committee, Project Committee for Determining Pressures in Glass Aerosols of the

Chemical Specialties Manufacturers Assn., it was announced June 8. The method has been approved by the committees and the administrative committee of the Aerosol Division. Apparatus required to determine the internal pressure of glass aerosols includes a pressure gauge adapter; a pressure gauge, a constant temperature water bath, and any standard model barometer. Full details

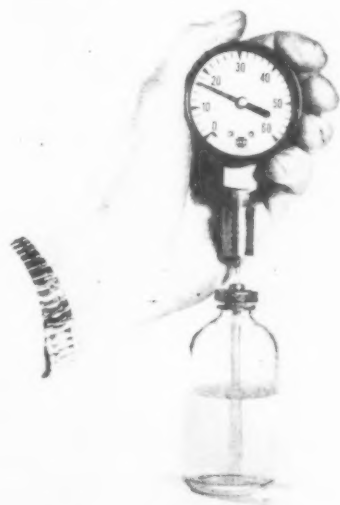


Photo courtesy General Chemical Division
Pressure gauge for determining internal pressure of glass aerosols.

on the tentative method will be published in the July issue of *Soap & Chemical Specialties*.

Detrex Buys Hooker-Detrex

Hooker Electrochemical Co., Niagara Falls, N.Y., and Detrex Corp., Detroit, are negotiating for the sale to Detrex of the capital stock owned by Hooker in a jointly-owned subsidiary, Hooker-Detrex, Inc. Under the agreement Detrex will become sole owner of the trichloroethylene and anhydrous chloride plant in Ashtabula, O. The Tacoma, Wash., plant of Hooker-Detrex will be transferred to Hooker. Financing for Detrex is being provided through a new issue of \$1,100,000 of preferred stock and a combination bank and insurance company 15 year term loan in the amount of \$3,400,000.

The transfer is expected to become effective before July 1.

Detrex will then consolidate all its subsidiary companies and will be known as Detrex Chemical Industries, Inc. Detrex will continue to operate two plants in Ashtabula, two in Detroit, and one plant in Bowling Green, Ky., which makes products for drycleaning.

New Chemway Plant

Chemway Corp., New Brunswick, N.J., will soon begin construction of an 80,000 square foot building in Wayne Township, N.J., which will provide the firm with main offices, laboratories and production facilities. The new headquarters will replace the present Chemway plant in New Brunswick.

Miller Bill Now Law

The Miller Bill becomes law July 22. The bill establishes tolerances and exemptions from tolerances for pesticide chemicals in or on raw agricultural commodities. Details on permissible residues of aldrin, dieldrin and endrin on various crops are available from the Agricultural Chemical Sales Division of Shell Chemical Corp., New York. Tolerances for residues of piperonyl butoxide and pyrethrins in grain protectants are 20 ppm and three ppm respectively.

New Betco Wax

Betco Corp., Toledo, O., has developed a new waterproof self-polishing floor wax called "Betco-Brite," it was announced recently by Carl J. Betz, president of Betco. The new product is the second floor wax developed by the firm this year. Earlier Betco introduced a new carnauba base wax.

The new waterproof wax is said to be translucent, possessing extremely small molecules which enable the floor to show through the wax. Betco claims its new product leaves no opaque film to darken the surface and contains an effective anti-slip agent. Further information may be obtained on request to Betco Corp., 830 Elysian Ave., Toledo 7, O.

CMRA Honors Forster

Albert E. Forster, president and chairman of the board of Hercules Powder Co., Wilmington,



Albert E. Forster

Del., received the 1956 Memorial Award of the Chemical Market Research Association at the group's spring meeting held last month at the Biltmore Hotel, New York. Presented for the second consecutive year the award was given to Mr. Forster by Charles P. Neidig, association president.

The award cited Mr. Forster "for his keen perception of the value of market research in the practice of sound chemical business management; for his utilization of the findings of market research in guiding the growth and diversification of Hercules Powder Co.; and for his enhancement of the profession of market research in the chemical industry." Mr. Forster has been a Hercules director since 1940, was named president of the company in 1953 and chairman in March of this year.

CMRA elected the following officers at its spring meeting: Edwin M. Ott, Pennsylvania Salt Manufacturing Co., president; R. E. Chaddock, Hercules Powder Co., president-elect; J. William Everson, Dow Chemical Co., treasurer; Robert M. Henderson, American Cyanamid Co.

Directors elected for two year terms are Robert L. Bateman, Carbide & Carbon Chemicals Co., and James E. Sayre, Barrett Division, Allied Chemical & Dye Corp. Directors serving their second year include: Charles P. Neidig, White, Weld & Co.; Parker Frisselle, Dow Chemical Co.; and Donald T. Taylor, Hooker Electrochemical Co.

Borax-Potash Merger

Pacific Coast Borax Co., New York, and United States Potash Co. have agreed on a plan to merge the two firms, subject to approval by stockholders of both companies. Pacific Coast Borax Co. is the newly formed American affiliate of Borax Holdings Ltd., formerly Borax Consolidated Ltd. The name of the merged company will be United States Borax and Chemical Corp. Holders of the 725,000 shares of common stock in the United States Potash Co., exclusive of the Borax Group, are offered one share of 4½ percent preferred stock of \$100 par value and five shares of common stock of United States Borax & Chemical in exchange for each five shares of potash common stock.

If the Potash Co. stockholders approve the proposed merger, the United States Potash shares owned by the Borax Group will be surrendered and cancelled.

United States Borax and Chemical Corp. will have a capitalization consisting of \$14.5 million of 4½ percent preferred and 4,174,000 common shares. All of the preferred and 725,000 of the common shares will be owned by the present U. S. stockholders other than the Borax Group. The latter will own 3,100,000 shares of the new common stock, while the remaining 350,000 shares of common will represent the holdings of a group of private investors headed by Lazard Freres & Co., New York.

Fairfield Moves in N.Y.

Fairfield Chemical Division of Food Machinery and Chemical Corp., Baltimore, announced late in May removal of its New York sales office to 441 Lexington Avenue, New York 17. New telephone number is OXford 7-1940.

The office is under the direction of John F. Odeneal, who has been in technical sales at Fairfield for the past six years. During the last year he has served as chairman of the division's new products committee.

Velsicol Appointments

Velsicol Chemical Corp., has advanced three men at its Marshall, Ill., plant, it was announced in May by W. K. McCready, director of manufacturing. Wilson C. Keyes, former production superintendent, has been appointed to the newly created position of assistant plant manager. New production superintendent is John Rex, who had been technical assistant to the plant manager. Robert Tiefel takes over another newly created post, that of assistant superintendent of the reduction area. He had previously served as a development engineer. Velsicol's Marshall plant makes technical chlordane.

Shea Expansion Progress

Shea Chemical Corp., Jeffersonville, Ind., reported early this month 80 percent completion of its five million dollar expansion program, started last August. The four-plant enlargement program means a 140 percent addition to the firm's capacity for producing elemental phosphorus according to Vincent H. Shea, president, who made the announcement. This in turn doubles the firm's capacity for sodium phosphate and adds a third to the phosphoric acid capacity. Shea expects sales this year to total about ten million dollars. The new capacity would permit the firm to double that figure in 1957.

At Columbia, Tenn., a new phosphorus plant is being constructed and an existing one enlarged. Combined production is expected to yield 45,000 tons of elemental phosphorus per year. Additional reserves of phosphate rock have been acquired and some facilities for the handling and processing of the ore have been tripled. The new furnace will feature a 42,000 KVA transformer; use of 45-inch graphite electrodes; and a precipitator of new design.

Shea is constructing a plant at Dallas, Tex., for the manufacture of sodium phosphates and phosphoric acid from elemental phos-

phorus. Annual production capacity will be 60,000 tons. Construction was started in February with completion and initial operation scheduled for October.

At Adams, Mass., facilities for research and pilot plant operations in the organic chemicals field were completed last December. Production of organic chemicals on a pilot plant scale has been underway for several months.

At Jeffersonville 15 acres have been purchased for ultimate plant enlargement. Paving of roads and plant-work area is now underway.

New Simoniz Floor Wax

A new anti-slip floor wax was developed recently by the Simoniz Co., Chicago. Tradenamed "Simoniz Super Anti-Slip Safety Floor Wax," the product contains ladium, an additive which is said to give floors a hard crystal-clear coating with maximum durability and lasting anti-slip performance.

Simoniz also claims "Super Anti-Slip" has excellent luster recovery after repeated damp-moppings. Designed for heavy-duty floor areas, it is said to strip clean and quickly, without leaving either stain or build-up. The new wax comes in one, five, 30, and 55-gallon containers.



AOCS Short Course Set

The American Oil Chemists' Society will present 27 topics at the 1956 short course on "Unit Processes in Fatty Oil, Soap and Detergent Industries" to be held at Purdue University, Lafayette, Ind., July 16-20. R. W. Sims of Swift & Co., Chicago, is program chairman.

In the soap, detergent and immediately allied fields the following topics and speakers have so far been announced: "Glycerine Recovery and Purification," by N. W. Ziels, Lever Brothers Co., Hammond, Ind.; "Drying of Soaps and Detergents," by Jack Ingraham, consultant, Chicago; "Finishing and Packaging of Soaps," by T. F. Waters, Procter & Gamble Co., Cincinnati; "Distillation of Fatty Acids," by R. H. Potts, Armour & Co., Chicago.

A number of subjects by speakers not yet identified include: fat splitting, saponification, handling and storage of raw materials for soaps and detergents, production of fatty alcohols, and production of alkylene oxide derivatives.

Among papers on processing and equipment are: "Heat Exchange," by Lyle F. Albright, Purdue; "Pumps and Pumping," by Mr. Albright; "Mixing," by J. H. Rushton of Purdue; and "Automatic Control," by J. W. Tierney, Remington-Rand Corp., Univex Div., Minneapolis, formerly of Purdue.

Mathieson Expands Plant

Olin Mathieson Chemical Corp., New York, recently announced a \$7,500,000 expansion program to double electrolytic production of chlorine and caustic soda at its McIntosh, Ala., plant.

The expansion will increase the plant's capacity to 250 tons of chlorine and 280 tons of caustic soda a day. Construction is being handled by Blaw-Knox Co., Pittsburgh. Completion of the expanded facilities is scheduled for January of next year.

Maint. Show Exhibitors

The first 25 manufacturers to reserve exhibit space at the International Sanitation Maintenance



J. Lloyd Barron

Show and Conference were announced recently by William S. Orkin of Orkin Expositions Management, producers of the show, to be held Oct. 14 to 16 at the New York Coliseum.

Among the exhibitors listed are: Bixon Chemical Co., New York; C. B. Dolge Co., Westport, Conn.; Franklin Research Co., Philadelphia; J. I. Holcomb Mfg. Co., Indianapolis; R. M. Hollingshead Corp., Camden, N. J.; S. C. Johnson & Son, Inc., Racine, Wis.; Oil Specialties & Refining Co., Brooklyn; Vestal, Inc., St. Louis, and West Disinfecting Co., Long Island City, N. Y.

Five speakers thus far have accepted invitations to appear on the

Albert J. Burner



program, according to program chairman J. Lloyd Barron of National Biscuit Co., New York. The speakers and their topics include:

- Donald L. Snow, chief, sanitary engineering branch, National Institute of Health, U. S. Public Health Service, Bethesda, Md., who will speak on "Structural Maintenance."

- Albert J. Burner, supervisor of cleaning standards, Port of New York Authority, will speak on "Cleaning Maintenance."

- Robert S. Taggart, sanitary engineer, National Biscuit Co., New York, will speak on "Analyzing Labor Costs."

- Robert J. Carey, purchasing division, Eastman Kodak Co., Rochester, N. Y., will lead a panel discussion titled "Mutual Aid in Purchasing Sanitation Supplies and Equipment."

- C. J. Sweeney, Naval Ordnance Laboratories, will speak on "Power Machines for Sanitation."

Wm. F. Smith Dies

William F. Smith, 59, a sales executive with Knomark Mfg. Co., Brooklyn, maker of "Esquire" shoe polishes, died May 28th in Kew Gardens General Hospital, Queens, N. Y. Prior to joining Knomark, Mr. Smith had been sales manager of the Griffin Mfg. Co., another Brooklyn shoe polish manufacturer. He was associated with Griffin for 37 years. Surviving him are his widow, Mrs. Ruth Larsen Smith, and two brothers, George W. and John A. Smith.

New Koppers Plant

A 285-acre tract at Arroyo, W. Va., has been purchased by Koppers Co., Pittsburgh, Pa., it was announced late in May by R. R. Holmes, vice-president and general manager of the Tar Products Division. A dual purpose facility will be built for the division on the newly acquired site: a processing plant for the manufacture of nicotinic acid and a development plant for upgrading of coaltar chemicals.

New Pentrox Package

Hofford Varnish Co., Carlstadt, N. J., recently announced that its fast-drying floor seal, "Pentrox,"



is now available in a new package. The container has been designed to offer quick, easy identification to purchasers of the product. "Pentrox" is made of chinawood oil, silicone and phenolic resins. It is claimed not to mar, scratch or flake off, and gives floors a lasting color retention, according to the manufacturer. It becomes tack-free 30 minutes after application and is ready for steel wool treatment within one hour. Hofford reports that one gallon of "Pentrox" will cover approximately 600 square feet of floor space.

New "Banafly Bait" consisting of one percent Diazinon in granular base is now available from American Scientific Laboratories, Inc., Madison, Wis. Package contains one pound of new dry bait and one pint of "Banafly" pyrene concentrate.



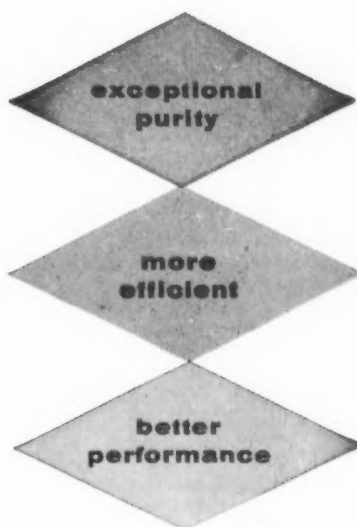


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A high active lauramide. The amide content is 94% minimum lauric amide.

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A high active amide of diethanolamine, containing the lauric and myristic amides in the ratio of 75% and 25% respectively.

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◆ **P-650**

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... is a new cosmetic grade sodium lauryl sulfate manufactured by Raymond Laboratories, Inc., 20-year specialists in cosmetic chemistry. The lightest colored sodium lauryl sulfate known, Pendit WA COSMETIC for the first time guarantees built-in uniformity. Nowhere else can you get the same viscosity, the same degree of emulsification, and the stability—batch after batch—without detergent variation problems that necessitate constant formula correction. Practically water-white, Pendit WA COSMETIC is essentially iron free and has a low salt content. Neutral and stable, continuing tests demonstrate unvarying results from lot to lot.

Pendit WA COSMETIC performs admirably as a detergent and emulsifying agent. Extensively used in the preparation of liquid and paste cream shampoos, versatile Pendit WA COSMETIC is also used in shaving creams, dishwashing compositions, car washes, personal cleansing components, and in emulsion polymerization. Pendit WA COSMETIC is shipped in 55-gal. plastic-lined, non-returnable drums and in tank trucks in three viscosity grades: low, medium and high.

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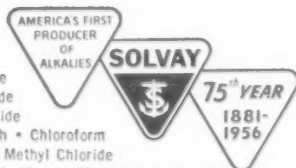
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This book contains detailed data on how the physical and chemical properties of SOLVAY® Snowflake Crystals can help in a wide range of applications from luxury cosmetic products to basic industrial processes.

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BL 6

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Unique base for liquid detergents. Looks clean, smells clean. Excellent foaming, very low haze-point, emulsifies grease and oil and is compatible with anionic and non-ionic materials. Cuts production costs. Requires no dissolving, has low salt content, needs no extra stabilizer.

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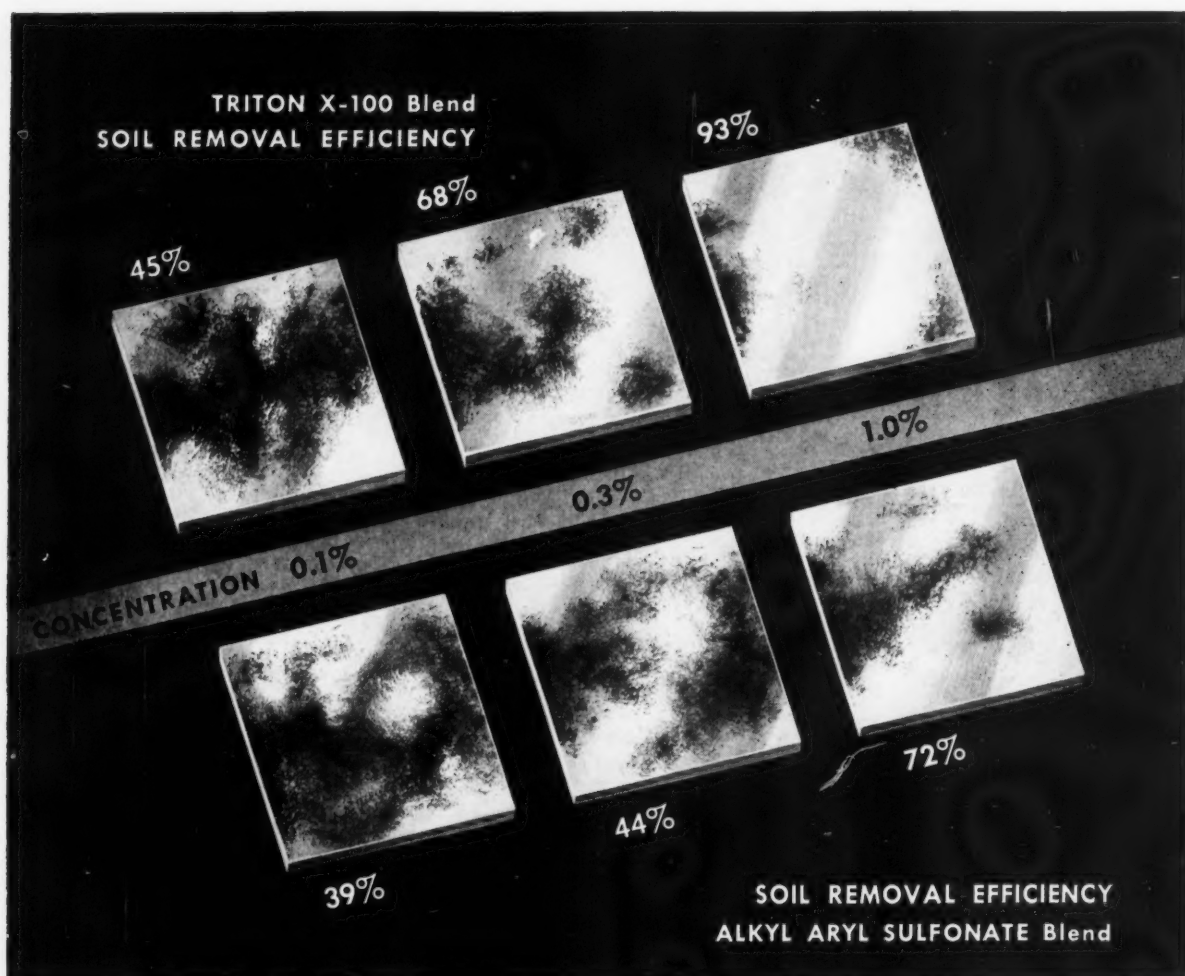
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See how much better **TRITON X-100** cleans

When blended with alkaline builders such as sodium tripolyphosphate, TRITON X-100 provides greater cleansing efficiency than anionic surfactants such as an alkyl aryl sulfonate.

This is substantiated by carefully controlled laboratory tests* in which a 95/5 blend of STPP/TRITON X-100 has been compared against a 95/5 blend of STPP/alkyl aryl sulfonate. These tests show that the TRITON X-100 blend provides a soil removal efficiency from 15% to 54% greater at concentrations of 0.1%, 0.3% and 1%.

Interestingly enough, the soil removal efficiencies given represent the average efficiency of each blend on the same 11 substrates—aluminum, zinc, iron, furniture steel, stainless steel, brass, copper, silver, ceramic tile, linoleum, and melamine plastic. Visualized above is evidence that TRITON X-100 is unsurpassed as an all-surface cleaner. Yet, on an active ingredient basis, it costs substantially less than the usual form of alkyl aryl sulfonates.

Write for samples and literature today.

*ASTM Bulletin No. 192, Sept. 1953—"A Dynamic Test for Detergency of Hard Surfaces"

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Does chelation actually represent a new kind of chemistry? Are the possibilities as exciting as many seem to think? This series endeavors to answer these—and many other—pertinent questions on this fascinating subject. It is hoped chemists, engineers and purchasing agents alike will find these answers helpful. Now on to . . .



The Chemistry of Chelation: Part II

Versene and Versenol Series • Descriptions and Uses *A measure of Value • A Suggestion*

To review in capsule form: Part I introduced chelation, offered examples of typical chemical reactions, applications, and discussed future possibilities. You will remember that a chelating agent is defined as a chemical which surrounds metallic ions with a multiple-ring structure that keeps the metal chemically inactive and holds it in solution. The applications in industry are many—and new ones are being found almost daily. That, of course, brings us to another consideration: different chelating agents for different uses.

VERSENE® AND VERSENL®

Chelating agents are commercially available from Dow as 15 different products—all based on aminocarboxylic acid derivatives. Among these, wide spectrum performance is shown by two series of products. The Versene series of products (Versene® 67, Versene 100, Versene Powder, Versene Beads, Versene 9 and Versene Acid) is based on EDTA* and the sodium salts of this material. The Versenol series (Versenol® 120, Versenol Powder and Versenol Beads) consists of various physical forms of Na₂ HEDTA**. The Versene series, except for Fe+++ in the alkaline pH range, is generally the stronger series of the two (more completely chelates the last traces of metal). The Versenol series is notably stronger for Fe+++ in the mildly alkaline pH range and is usually cheaper on a performance basis if the consumer can tolerate the weaker chelate structure. Versene is the strongest, most stable commercially available chelating agent. It is the one with the greatest number of successful applications.

DESCRIPTIONS AND USES

Here are three Dow chelating agents together with their descriptions and uses:

Versene 100 is a concentrated aqueous solution of a technical grade of the tetrasodium salt of EDTA . . . widely used in textile processing, detergent formulations and metal cleaning.

Versene Acid is a dry form of EDTA technical. It is used in many operations as a raw material for the preparation of various derivatives, such as metal chelates, salts (K, NH₄), esters and many others.

*Ethylenediaminetetra acetic acid

**Trisodium salt of N-hydroxyethylethylenediamine-triacetic acid

Versenol 120 is a concentrated aqueous solution of a technical grade of Na₂ HEDTA. It is also very valuable to detergent, textile and metal-cleaning processes.

Naturally these three specific agents are not the answer to every problem. That's the reason for the many other Versene products, to be discussed in Part III.

A MEASURE OF VALUE

A measure of the broad performance capacity of a chelating agent can be obtained from its *chelation value*—determined on a reference metal. Calcium is used as the reference metal under the standard test procedure accepted by the industry. Dow prefers this "performance basis". It specifies more clearly what chelating agents *actually accomplish* than such terms as "% solids" and "% active". Consequently, the "100" in Versene 100 means that one gram of this product will chelate 100 milligrams of calcium carbonate in accordance with the standard test procedure. By the same token, one gram of Versene 67 will chelate 67 milligrams, and so on.

A SUGGESTION

Two closing thoughts: Dow wants to help in any way possible to further develop the applications for chelation. Also important, Dow would like to hear from *you*—your thoughts, reactions, suggestions. Please inquire about any problems or ideas you may have. Information or actual technical assistance will be forthcoming promptly. Write, on your company letterhead, to Technical Service and Development, Dept. 5C-912H-1, THE DOW CHEMICAL COMPANY, Midland Michigan.

THE NEXT TWO TOPICS IN THIS SERIES

PART III
July
August
September

Specific chelating agents for specific applications (agent for iron control depends on pH—Versene Fe-3 Specific® for iron and transition metals on the alkaline side, Versene T® for iron in presence of free caustic—other solutions to special problems).

PART IV
October

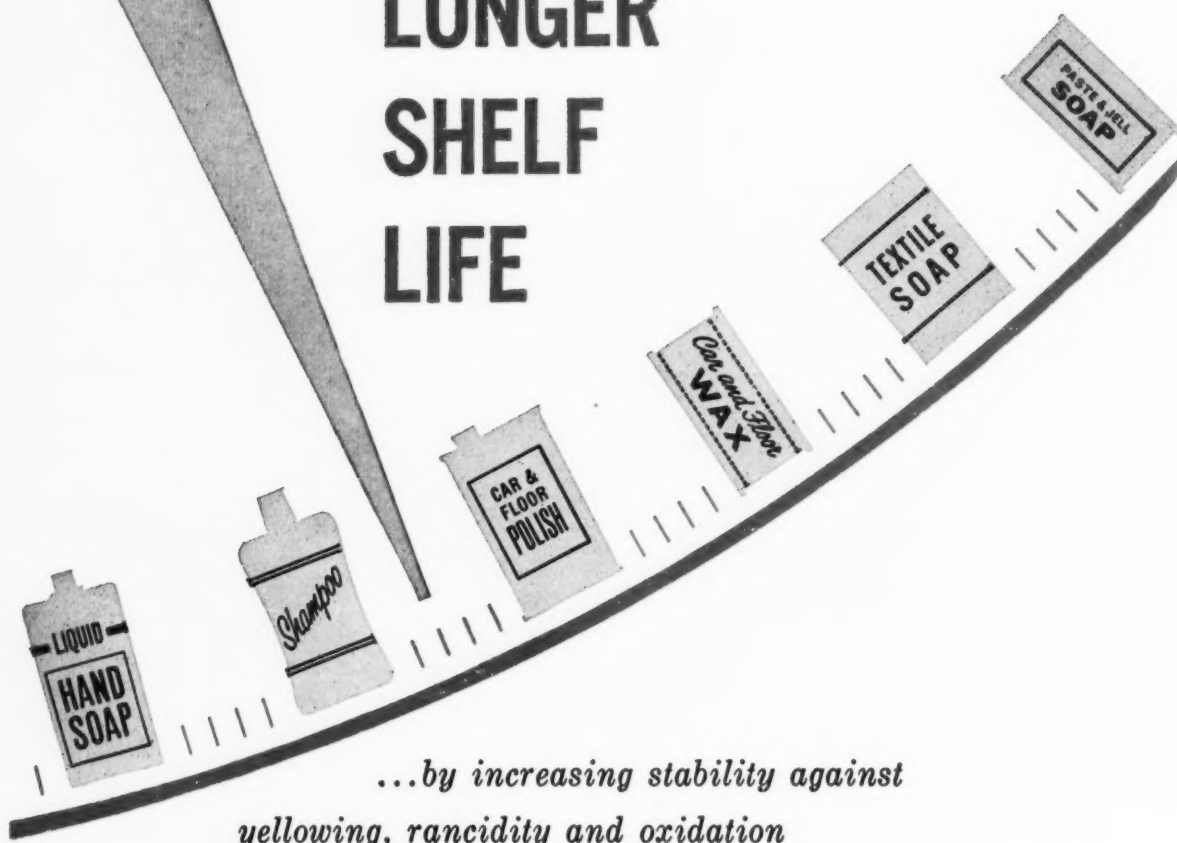
Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and Kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

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*Emery Fatty Acids
give your products*

LONGER SHELF LIFE



*...by increasing stability against
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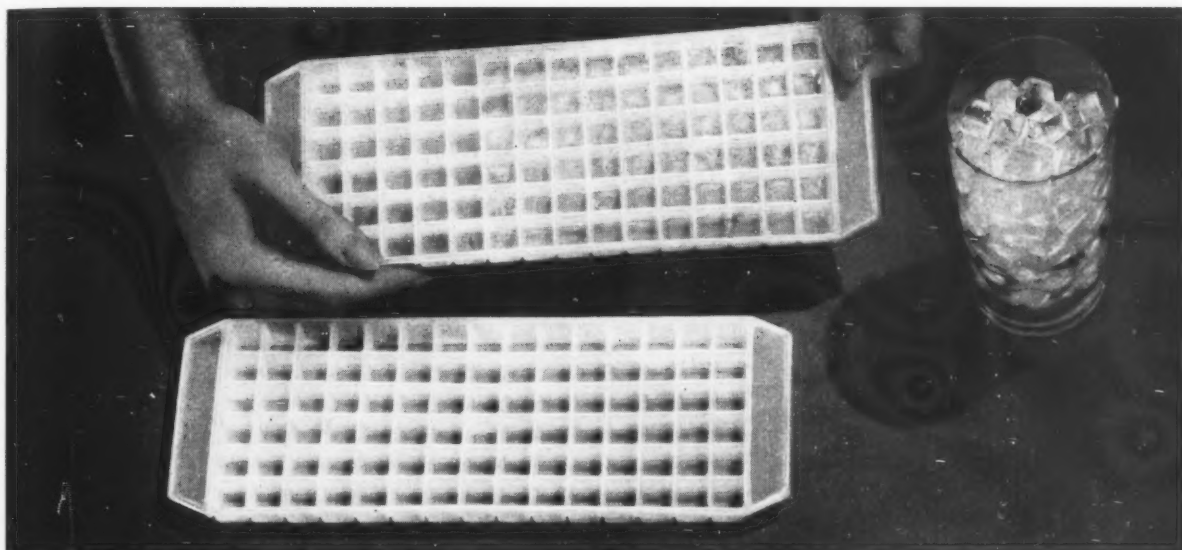
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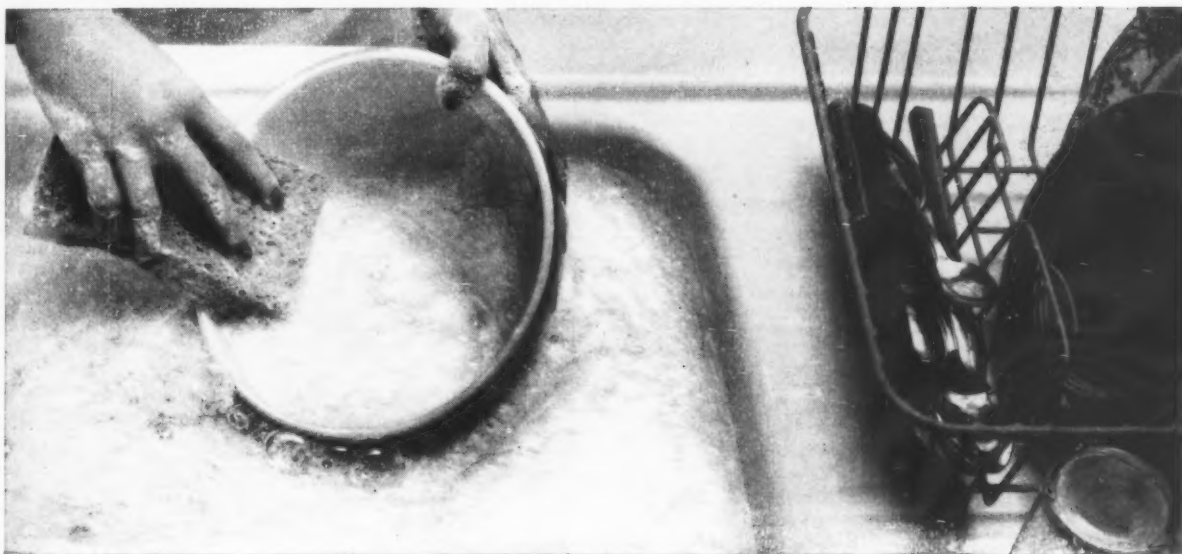
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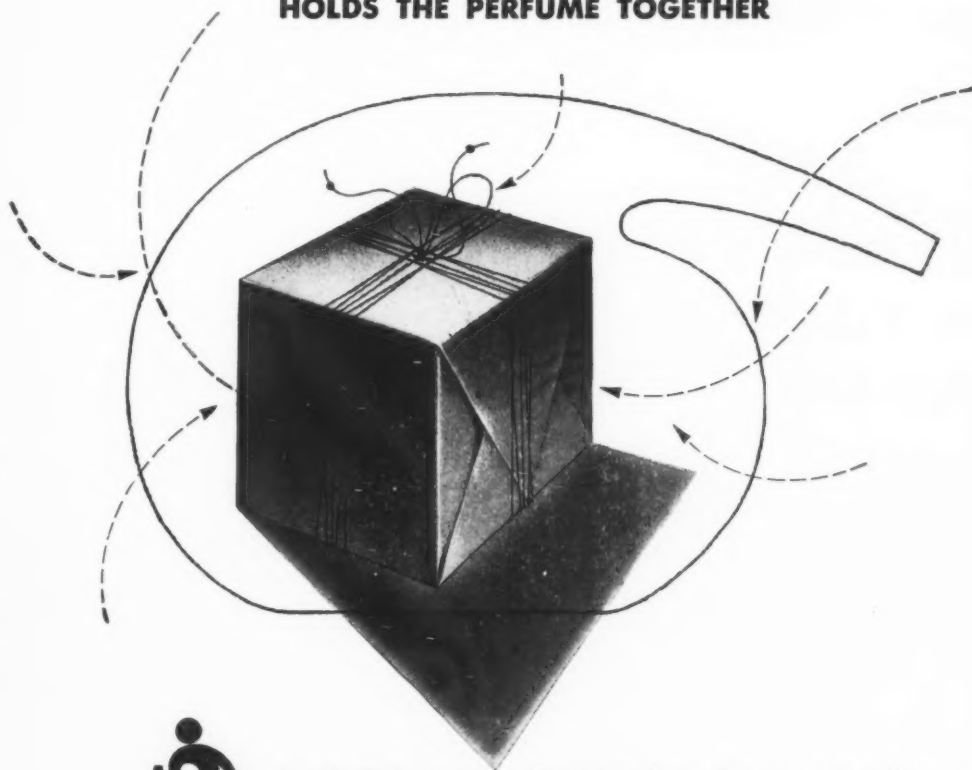
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V556-2


... in brief

as the editor sees it . . .

 **LIQUIDS . . .** Sales of liquid detergents as a group have shown a striking increase. First quarter sales for 1956 broke all previous records. They are up 95 per cent over the first quarter of 1955 and up 39 per cent over the previous quarter, the fourth of 1955. Whether the newer heavy duty detergents are an important factor in this increase or whether it is principally a further rise in dishwashing liquids, we don't know yet.

But whether it's liquids, powdered detergents or plain soap, the leading soap merchandisers of the country are still in front of the market parade, just as they were ten, twenty, thirty years ago. There have been a few changes, but not many. As the late Frank Countway once said some twenty years ago: "No matter what the housewife uses to wash her dishes and her clothes, we soap makers intend to sell it to her for a long time to come." Looks like he was right.


* * * * *

 **CARNAUBA . . .** Prices for carnauba wax are on the rise again. Whether this will retard consumption as it has upon occasion in the past, we do not know. We do know, however, that over the past year carnauba prices have been much lower than they were for some years preceding and during this recent period, a wider use in floor wax formulation was noted. During the higher priced era, much progress was made by synthetic resins and waxes in floor wax formulation. We doubt that any of this ground will be lost. The synthetic substitutes are too firmly entrenched today.

Whether carnauba prices are rigged in the producing areas, we do not know for sure. But we surmise that they are. That this has been a

detriment to the expanded use of the product, we are certain. Over the past decade, the rise in synthetics has kept pace with expanding floor wax production and use. The consumption of carnauba has not. During most of this period, carnauba prices were on the whole excessive. From this, we feel that carnauba producers can draw their own conclusions.

* * * * *

 **AEROSOL SURVEY . . .** According to the figures of the Chemical Specialties Manufacturers Association, U. S. and Canadian producers of non-food aerosols turned out 240,000,000 units in 1955. This was an increase of 30 per cent over 1954 and came close to the advance predictions of 250,000,000 units. In spite of predictions that shave lather would take over the No. 1 aerosol spot, household insecticides still led the parade in 1955 by a slight margin. Bug killers accounted for nearly 56,000,000 units or 23.3 per cent of 1955 overall output. Hair sprays were second with 53,700,000 units and shave lather third with 45,400,000 units. For the first time in 1955, aerosol fire extinguishers were surveyed separately and showed close to two million units. Of the total, some 10,000,000 units were packaged in glass, the balance in metal.

Even more significant are the ups and downs in aerosol output from 1954 to 1955. Insecticides showed a jump of close to 30 per cent. Room or space deodorants went up 86 per cent in sales. Various items like waxes, rug shampoo, water repellents doubled their sales, a 100 per cent gain. Miscellaneous items such as mildew preventives, lubricants, anti-static agents, etc. were upped 50 per cent. Pharmaceuticals and medicinals were 28 per cent higher although



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they only totaled 1,500,000 units. Shave lather showed a gain of 7 per cent. The only group to show a loss in 1955 were paints and lacquers which dropped three per cent.

In these market survey figures, we feel several significant trends are shown. We think that they are vitally important to every aerosol marketer and are worthy of close and diligent study. They may chart the future of the market far closer than we believe.

* * * * *

INSECTICIDES . . . Just where is the insecticide market headed? A survey of household, industrial and stock insecticides by the Chemical Specialties Manufacturers Association reveals a number of enlightening facts. Significant is the statement of the chairman of the survey committee, Dr. George Fiero: ". . . although sales of insecticidal aerosols have more than doubled since 1951, insecticide spray sales have not reflected a loss . . . sales for liquid sprays reported for 1955 were 10,557,386 gallons compared with 10,443,000 gallons in 1954, an increase of 1.19 per cent."

Numerous changes have taken place in the household and industrial insecticide market over the past few years, the survey shows. Sales of DDT residual sprays have declined while sales of chlordane and dieldrin products are up sharply. In 1955, these latter two constituted over 48 per cent of the residual spray market. Fabric pest sprays and oil base livestock sprays showed a drop in 1955. Livestock wettable powders continued their downward trend. Gains of over 54 per cent were shown in sales of ant baits, pastes and traps. Livestock emulsion concentrates showed a gain of 70 per cent in 1955. Other emulsion concentrates showed a slight gain. Sales of small pet insecticides jumped over 300 per cent in sales over 1954.

Although the overall sale of household and industrial insecticides, exclusive of aerosols which showed a 30 per cent gain, holds up well, the market presents something of a confusing picture. With the constant change taking place, this is no way surprising.

IFATTY ACIDS . . . Shortages have developed in certain fats, oils and especially in fatty acids. Export demand for these products continues active and has been sufficient to reduce domestic supplies to a point where higher prices could follow. Higher prices for fatty acids and oils means that soap prices could move up in the near future. Just at the moment there seems to be a lull, but we sense a feeling that industrial soap prices could be on the move a month hence or sooner. The wind is sure blowing in that direction it seems to us.

* * * * *

LAXITY . . . Sanitary and maintenance products which remain in the consumer's storeroom unused can be a pain in the neck to the manufacturer. If for some reason or other, consumer's employees dislike to use a product or refuse to use it, naturally the manufacturer's sales suffer proportionately. And we have a hunch that there is plenty of this sort of thing which may end up eventually as a returned goods problem. Unused merchandise is in reality unsold merchandise because it blocks the pipelines of further sales.

Recently at a convention, a suite living room next morning smelled badly of tobacco smoke. A quick investigation showed that the maid's cart carried a can of aerosol room deodorant which she had simply failed to use. And if she failed to use it in a much needed instance, the chances are she seldom if ever used it. The can probably was mostly an ornament on her cart. The hotel was sold once, but any repeat orders would be in the far distant future, if ever, according to our guess.

Laxity of help and their refusal to use indicated products in every instance is no secret. And it can be a serious road block to sales. Maybe the answer is more manufacturers' detail men to get a product used and keep it in regular use. Maybe it's something else. We're not sure. But we do have a hunch that this isolated instance is repeated many times every day by thousands of maintenance people across the country.

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as the reader sees it...

Seeks Lines

Editor:

I am preparing for an extended sales trip through the Far East shortly and would like to handle a line on commission basis. The areas I will cover will be Hawaii, the Philippines, Japan, Singapore, Indonesia, India, Pakistan, Turkey, Spain and Portugal. Interested parties may contact me direct for further information.

S. H. Neelman
4727 N. Kenmore Ave.
Chicago 40, Ill.

Although Mr. Neelman did not say in his letter when he is leaving for the trip, we presume it will be this summer and urge that manufacturers of soaps, detergents or chemical specialties wishing to contact him for more information about representing them in the areas listed do so as soon as possible. Mr. Neelman has written to us at the suggestion of Roy Peet, manager of the Soap Association, Ed.

Waterless Cleaners—More

Editor:

I enjoyed particularly your editorial on "self seekers" in the April issue of *SOAP*. We spend a lot of time reading papers that are obviously biased. In most cases they are from the makers of intermediate chemicals, etc., that are being offered to formulators for the consumer trade, i.e., either industrial or non-industrial.

... We are somewhat in accord with Mr. (A. H.) Dickmeyer's feelings (page 39, April *SOAP*) regarding the title selected for the coverage of Dr. Birmingham's preliminary report on waterless skin cleaners. ... Taken out-of-text as it was it might be a little harsher than the trade deserves. Of course, the sense of it is true, but as Mr. Dickmeyer says, if the term "ideal" cannot be applied with impunity to all soap products, it should not be applied in such a negative sense to waterless skin cleaners. I believe that this is not "beside the

point" because it casts a very definite inference in the customers' minds that you can wrap them all up in a bag and label them "not good enough." In view of the shady history of such products and the fact that there are good as well as poor ones on today's market, such a generalization hurts the industry.

Recently I had occasion to suggest to a customer that he contact Dr. Birmingham regarding the acceptance of our product. The customer said, "I understand why Dr. Birmingham said none of them were any too good," and he referred to the article in *SOAP*. I agree that both the advantages and disadvantages of a product are proper reading matter in *SOAP*, but think perhaps the shortcomings could be left out of the title because of customer implications. The makers certainly know of the weakness and are doing something about it. Nor do I think it gives sales ammunition to the makers of the better products

when they are all lumped together under the title of "not ideal!"

The interesting test relating to mildness in which only three of the 15 passed is worth a line or two of comment. Two of the waterless cleaners that passed were based on mineral oil. At this stage of the technology, mineral oil-based products do not, as a rule, clean well enough for general acceptance in industry where the soils are really tough to remove. The other product ... is not exactly a waterless skin cleaner of the emulsion type but a sulfonated oil type. It can, of course, be used without water but you feel you want to wash your hands after using it. The test used was the closed patch and is useful for rough screening purposes. There is poor correlation (in the case of waterless cleaners) between closed patch results and use conditions.

One final thought—I don't believe Dr. Birmingham is too critical of waterless hand cleaners. He is very fair. He considers most of those tested as satisfactory and a few not satisfactory. He feels that there is need for improvement and

(Turn to Page 73)

William C. Thomas, director of Potter and Moore (Australia) Pty., Ltd., Melbourne, Australia, recently paid a two day visit to the main offices and plant of John H. Breck, Inc., in Springfield, Mass.

During his visit Mr. Thomas conferred with officials of John H. Breck, Inc., relative to the sale and distribution of Breck preparations in Australia and New Zealand.

Potter and Moore, founded in 1749, in addition to importing and distributing cosmetic preparations, also is one of Australia's cosmetic manufacturers.

At the conclusion of his stay at John H. Breck, Inc., Mr. Thomas departed for Great Britain.

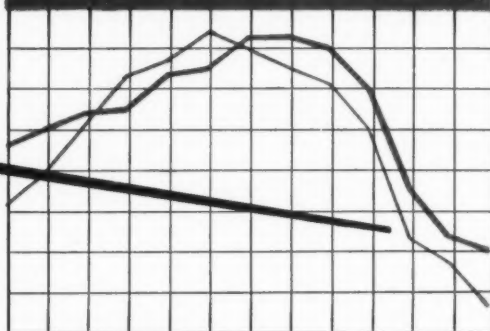


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Carbon Soil Removal . . .

...in the presence of polyphosphates and hard water

PRIOR to the use of synthetic detergents in household laundering compositions, it was common practice to add phosphates to soap in order to achieve some purpose called "building." Such builders were considered necessary because soap gave insoluble hard water salts. One virtue of synthetic detergents is that in general they give very soluble calcium and magnesium salts. It was expected that the detergency of synthetic detergents would not be adversely affected by hard water. However, the shift from soap to synthetic detergents did not entirely eliminate the hard water problem. Detergents provided only an apparent partial solution by not forming insoluble hard water salts. Later it was found that the addition of phosphates to synthetic detergents was necessary for acceptable detergency in hard water. While there might have been some obvious basis for addition of phosphates to soap, the basis for their addition to synthetic detergents has not been clear, especially in the case of those detergents which do not form insoluble hard water salts.

In a previous paper (1,6) we examined the general effect of electrolytes and the role of Ca^{++} and Mg^{++} ion suppressants in the redeposition of carbon soil. A stoichiometric relationship between phosphate and divalent hard water ions was indicated in this artificial aquadag system. The pronounced effects of the phosphates and calcium ions on soil redeposition suggested examination of the extent

and validity of these relationships for removal of carbon soil from cotton in the laundering process.

Materials and Methods

TWO different laundering procedures were employed, one a laboratory method using artificially soiled cotton fabric and a Launderometer, the other a practical home laundering procedure using cotton hand towels soiled naturally in actual use and a commercial washing machine.

A. Launderometer Procedure for Wash Tests

The washing solution or bath was prepared and 100 ml. was placed in each of ten Launderometer jars together with 40 quarter-inch stainless steel balls. After standing for about 30 minutes in the preheater at 130°F, one soiled swatch (6 x 3½ inches) was added and washing was carried out for 20 minutes at 130°F. The swatch was removed and rinsed twice in water of the same hardness used to prepare the bath. The swatch was then air dried and measured for reflectance without ironing or pressing. The change in reflectance due to variation in blackness of carbon on cotton fabric has been commonly taken as an index of detergency and this is reasonable in this

particular case. From three to six or more replicate runs were made for each point in order to provide reliable averages. It has been estimated (2) that the standard deviation for a wash test procedure similar to that employed in the present paper was ± 0.67 units of soil removal or $\pm 3.4\%$ when the results were calculated as % detergency. The present Launderometer wash tests gave at least this degree and probably higher precision because of the greater number of replicates.

Reflectance readings were made with a Hunter Multipurpose Reflectometer, taking a total of eight readings, four on each side of the fabric. The results are expressed as "percent detergency" and are calculated by the equation: % Detergency =

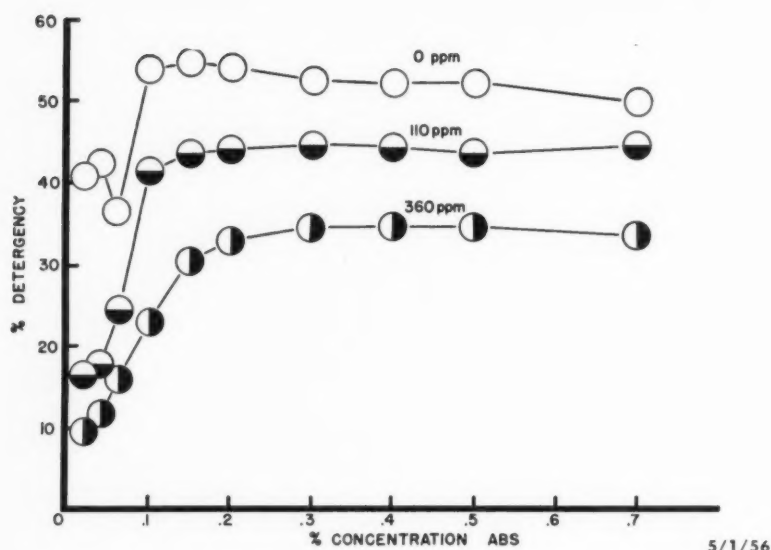
$$\frac{(R_o - R_s)}{(R_c - R_s)} \times 100$$
 where R_o is the reflectance of the original white fabric, R_s the reflectance of the soiled fabric, and R_c the reflectance of the washed fabric.

Waters of different degrees of hardness were used; distilled water and an artificial hard water containing CaCl_2 and MgCl_2 in a molar ratio of 3 to 1 having a total hardness of 360 ppm as CaCO_3 . The 110 ppm water was Washington, D. C. tap water. A soiled cloth was prepared by mechanical impregnation of Indian Head cotton muslin (Nashua Mfg. Co., bleached but unfinished) with a mixture consisting of 65 grams Chesebrough white Vaseline, 2 grams Bihn and Wolff Grinders #2 lampblack, and 2 liters dry carbon tetrachloride. The reflectance

By
P. T. Vitale and J. Ross
Colgate-Palmolive Co.
Jersey City, N.J.
and
A. M. Schwartz*
Harris Research Laboratories, Inc.,
Washington, D.C.

*Paper presented during the 42nd midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 21, 1956.

FIG. 1
LAUNDEROMETER SOIL REMOVAL TESTS



of this soiled fabric was in the range of 27% whiteness.

Several types of soil for cotton cloth were examined. The above described soil was chosen since it showed sensitivity to different hardnesses of water and varying concentrations of detergent. This was considered a reasonable criterion of the validity of this soiled cloth because not all artificially soiled cloths tested gave good response. The detergent mixtures were prepared in room temperature water not more than two hours before use to avoid hydrolysis of the triphosphate. All mixtures were prepared from a single lot of commercial sodium triphosphate, and a single lot of commercial sodium salt of dodecyl benzene sulfonate (Ultrawet K, Atlantic Refining Company) containing 89% active detergent. For convenience this detergent will be abbreviated ABS.

B. Practical Towel Test Method

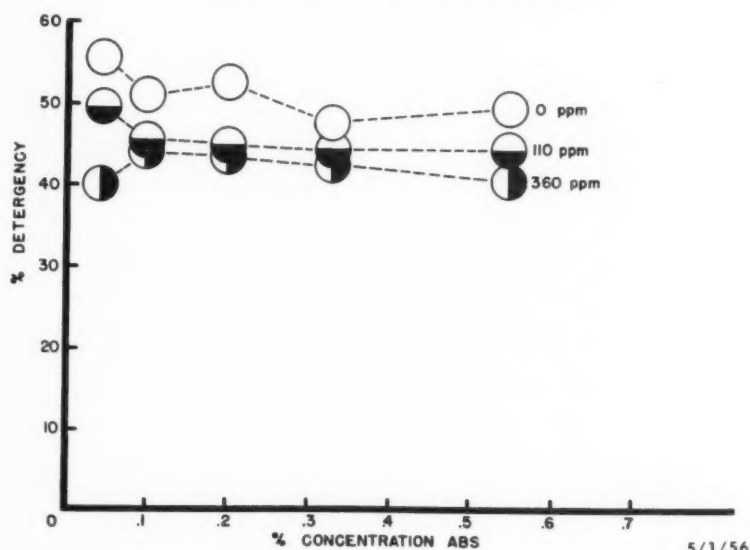
Two hundred and seventy ordinary new hand towels were placed in chained racks in plant wash rooms and soiled during normal use. These towels were collected at regular intervals and laundered in an apartment type "Easy" washing machine under the con-

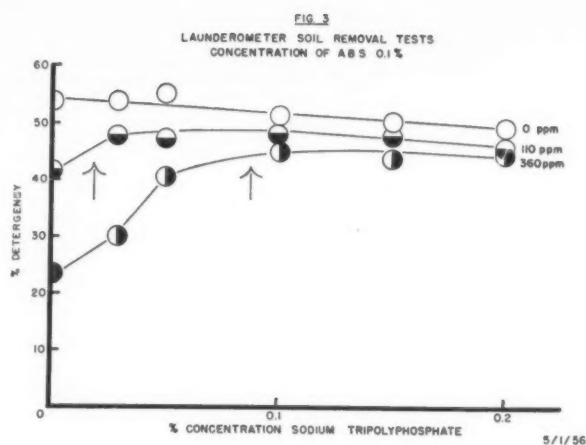
trolled conditions of 120°F. and a 10 minute washing cycle. The pH of each washing solution was adjusted to 9.5 prior to laundering the towels. The towels were then returned to the washroom for re-soiling, and the cycle of re-soiling followed by laundering was repeated for six successive soilings and launderings. Towels were meas-

ured for whiteness at the beginning of the test (that is, before setting them out for the first soiling) and again at the completion of the test (after the final and 6th laundering). A Hunter Reflectometer modified in the manner described by Thompson (3) was used for measuring the reflectance of the towels. Eighteen test towels and two "control" towels used to measure re-deposited soil were washed together in five gallons of wash solution. The control towels received as many launderings as the soiled test towels but were never set out for soiling. The detergency points in the curves of Fig. 4 are the averages of two separate tests which represent the average readings of 36 towels for a given point on the curve. The reproducibility of a single determination is about ± 0.55 units of reflectance when points are compared in the same series of runs. This towel test contrasts with the Launderometer test not only in the type of soiling but also in that it tests the effectiveness of the detergent composition over a series of successive soiling and washing cycles.

The 50 ppm (approximate) solutions were made from Jersey

FIG. 2
LAUNDEROMETER SOIL REMOVAL TESTS
PLUS EXCESS SODIUM TRIPHOSPHATE





City tap water which generally runs between 2-3 grains of hardness. The 120 ppm and 360 ppm solutions were made from Jersey City tap water by adjusting the tap water with a stock hard water solution of 3 to 1 molar ratio of CaCl_2 to MgCl_2 expressed as their carbonates.

Results and Discussion

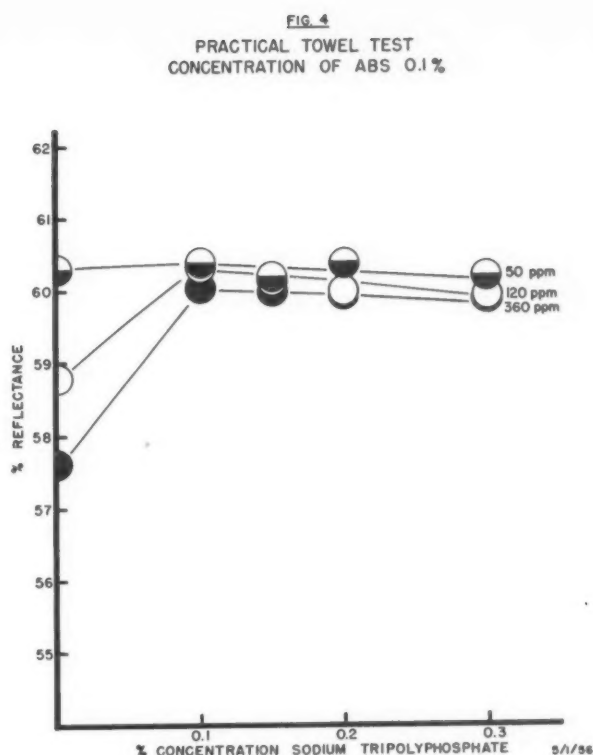
A SERIES of Launderometer wash tests were run in distilled, 110 ppm and 360 ppm water respectively, varying the concentration of ABS from 0.02% to 0.7%. The results are shown in Fig. 1. Three curves which are approximately parallel were obtained. At all concentrations of ABS in these curves, the harder the water the lower the detergency value. The distilled water curve reaches its highest value at 0.1% concentration of ABS.

The above series of wash tests were repeated in the presence of 0.2% sodium tripolyphosphate (TPP) and the results are shown in Fig. 2. The gross effect of TPP is to raise the detergency values in hard waters. The distilled water curve in the presence of phosphate gives slightly lower detergency values than the corresponding unbuilt system. The two hard water curves in the presence of phosphate lie below the distilled water curve. The depressed detergency values in hard water are substantially corrected by an excess of phosphate.

In order to determine the

quantity of phosphate required to correct the hard water effect on the detergency values, a series of wash tests were run at constant ABS concentration of 0.1% in distilled, 110 ppm and 360 ppm water respectively at varying concentrations of TPP, up to 0.2%. The results are given in Fig. 3. The distilled water curve remains substantially unchanged with increasing TPP at this level of ABS concentration. The 110 ppm curve has reached a lower plateau at a concentration of 0.026% TPP and the 360 ppm curve has reached a still lower plateau at 0.1% TPP. For the highest detergency possible in these systems, these weights of TPP can be considered as approximately equivalent to the amount of calcium hardness in the water.

Detergency values for three water hardnesses (50, 120 and 360 ppm) were also determined by a practical towel test method. A constant ABS concentration of 0.1% was used with progressively increasing concentrations of TPP. Results are given in Fig. 4. For the water hardnesses examined the



detergency plateau has been reached at a concentration of .1% TPP. Hence, these curves do not show separate "breaks" for 120 and 360 ppm water. These towel tests show general agreement with the Launderometer tests in that no further improvement in detergency occurs when excess TPP is used beyond the "break."

Carbon soil can be removed from a cotton substrate by mechanical agitation in water. The presence of a surface active agent facilitates this removal, reducing the time and the amount of mechanical work necessary. Preston (4) showed that measured detergency on cotton swatches reaches a plateau at about the critical micelle concentration (c.m.c.) of the detergent. Inorganic salts reduce the concentration of detergent required for micelle formation.

The present study is concerned with the effect of phosphate apart from its salt effect and for this reason we attach importance to the limited portions of the curves at ABS concentrations above the c.m.c., where the effect of the phos-

phate as a salt is negligible. The ABS used in the present work has a c.m.c. less than 0.1% as shown in the distilled water curve of Fig. 1.

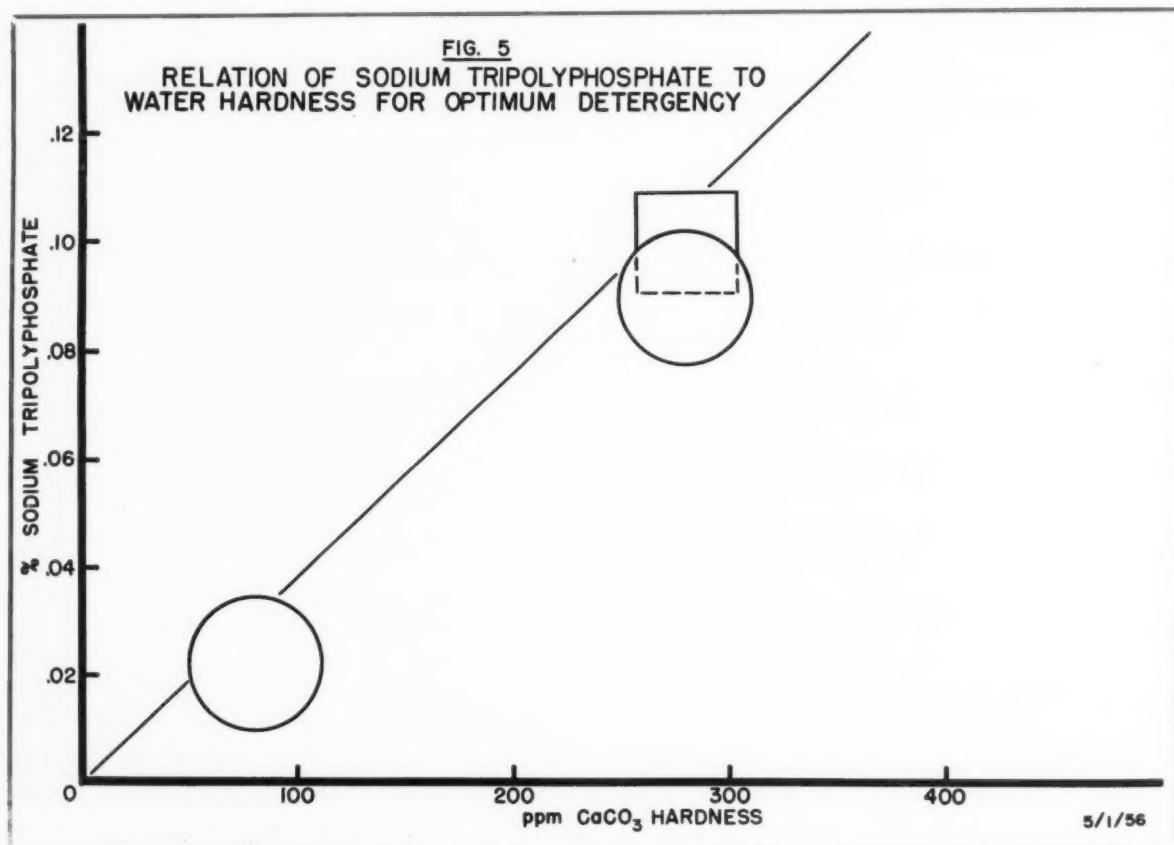
Another important factor in detergency is the suspension of soil removed from the substrate. Powney and Noad (5) found that certain silicates and phosphates showed marked suspending power for ilmenite black when the salts were present at a concentration of 0.1% or less. They obtained optimum suspending power at much lower concentrations of salts such as 1 to 100 ppm. At this concentration, linear polyphosphates disperse finely divided inorganic salts. However, more recently (6) we have shown that at normal washing concentrations the polyphosphates behave as ordinary electrolytes causing increasing redeposition of soil with increasing concentration of the salt. The effect in redeposition roughly corresponds to the Schulz-Hardy rule. Accordingly, for the case of soil redeposition from hard

water, suppression of the hard water ions of Ca^{++} and Mg^{++} was of special interest. It was shown that the reduction of soil redeposition in hard water was related to the extent to which the concentration of Ca^{++} and Mg^{++} ions could be suppressed. The condensed phosphates played an important part in complexing Ca^{++} and Mg^{++} . In soil redeposition, the most complete suppression of the hard water ions occurred at the approximate stoichiometric equivalence point. The curves for redeposited soil in hard water went through a minimum which occurred at about the equivalence point for complexing Ca^{++} with the given sequestering agent. In distilled water, however, the addition of phosphate or other salts to the solution of anionic detergent resulted in progressive increase in soil redeposition. For this reason, the hard water redeposition curves pass through a minimum when phosphate is added in increasing amounts. After suppression of

Ca^{++} and Mg^{++} further addition of phosphate behaved like the general addition of electrolytes to distilled water with a consequent increase in redeposited soil.

In the present series of detergency tests in hard water using both artificial and natural soil, the effects due to water hardness and phosphate parallel to some extent those obtained in the redeposition studies discussed immediately above. In distilled water, however, the detergency tests do not show a marked depression of detergency with increasing phosphate as in the case of soil redeposition. Possibly this effect is not apparent because the artificial soil suspension tests are run at a much higher soil to cloth ratio than in the soiled cloth and practical detergency tests. The pattern of similarity between soil redeposition and detergency tests is in hard water where phosphates are introduced.

The essentially simple idea
(Turn to Page 180)





Pierre Harang,
President



C. T. Lipscomb, Jr.
Vice-President



A. E. Johnston
Vice-President

T. G. A. Meets, Elects Harang

A diversified program featuring sessions on management, advertising and packaging highlighted the 21st annual convention of the Toilet Goods Association, held at the Waldorf-Astoria Hotel, New York, May 15, 16 and 17. The three-day convention concluded with an all-day meeting of TGA's Scientific Section May 17.

Other highlights of the meeting included the election of new officers and directors, a closed circuit television presentation by National Broadcasting Co. dealing with television advertising, and the presentation of the Charles S. Welch memorial essay prizes.

Record sales of more than \$1,192,000,000 in the toilet goods industry in 1955 were cited by John A. Ewald, head of Avon Products, Inc., Suffern, N. Y., president of TGA, to support his contention that "as an industry we have continued to grow in stature during the past year." This is equivalent to a dollar expenditure for cosmetics and toilet goods per household of about \$25 annually, almost 2½ times the expenditure per family in 1934. This growth was attributed by Mr. Ewald to "better products" and greater acceptance of those products on the part of the consumer.

"Just as important as this continued growth and success is the fact that the industry has achieved new maturity. The industry is large, but more important than size is the fact that it is accepted as a stable and a substantial member of the business world. The realization has come to the public and to the financial world that the toilet goods industry is a sound business and will continue to grow," Mr. Ewald said in his presidential address.

He pointed out also that "fashion is still a driving factor in our industry. An important development in this field is—the awareness of the members of our industry—that we can have a part in the development of fashion through the utilization of color, fragrance and good grooming."

"The trend to development of new products and the broadening of the cosmetics and toilet goods base through research continues at a high pace. Continuing research, which helps to adapt new discoveries and developments in all fields of cosmetics and toiletries, gives proof of the foresight and ingenuity of our industry.

"Research on cosmetics, fragrances and toiletries of all kinds has not been restricted to our own technical laboratories and offices.

Suppliers of our essential products and materials have rendered us invaluable help. We are grateful for this and we know we can count on them for sizeable contributions for years to come.

Basic Research Need

THERE is increased recognition of the need for more basic research in the distribution fields and many organizations are broadening their efforts to provide better guides for doing business. As our sales increase, our distribution depends more and more on basic research of consumer markets and distribution techniques. We are concerned with a new and ever-changing market—not with a static economic climate. Population is not only increasing but is constantly shifting. Good roads and increasing numbers of vehicles have caused a continuing mass migration to outlying areas.

"Consumer incomes, attitudes and needs are changing rapidly. The broadening of market research makes it abundantly clear that we are conscious of the fluidity of our market and have the foresight to keep ourselves as well informed as it is possible to do with the techniques available.

"The influences of changing

times and pyramiding problems sometimes cloud our thinking when we look into the future to try to judge what is ahead for us. When we stop to consider our problems today, however, they are not very different than they were 21 years ago—except in degree. Twenty-one years ago we were challenged because new markets were opening up at a rapid pace. New markets are still developing with amazing speed but we find that our thinking has to be broadened to consider the world in addition to local and national markets. As long as pressures for expansion of business are in evidence the opportunities for greater success in the cosmetics and toilet goods business will be present.

"We must be constantly alert to new developments, assessing them in terms of our own business, visualizing how they will affect us and how we may utilize them in our future plans. We have come a long way in the past few years and have achieved through research, sound business practice, and high ethical standards, a goodly measure of financial soundness. The forward impetus which we have developed in the past few years will be constantly strengthened if we continue to look forward, taking full advantage of all the tools which are available to us and utilizing those new techniques which will surely develop as we go forward.

"As we look over the horizon, the potential of the toilet goods

industry is extremely promising. With increased emphasis on good grooming—the speed of fashion changes influencing hair styles—complexion coloring and hand and nail care—and seasonal cosmetics—and with our enlarged domestic and foreign markets—and the desire of every man and woman to be more fastidious—all of these factors add up to a tremendous future opportunity for growth for each and every member of the toilet goods industry."

Harang New President

ELECTED to succeed Mr. Ewald as president of the Toilet Goods Association was Pierre Harang, vice-president and director of Houbigant Sales Corp., New York. He has served as vice-president of TGA for several years and has been connected with Houbigant for 32 years. J. I. Poses, president of D'Orsay Sales Corp., New York, was named a vice-president replacing Mr. Harang. Mr. Poses has been a member of the TGA board of directors for many years and was formerly secretary of the association.

Reelected vice-presidents were Jean Despres of Coty, Inc., New York; A. E. Johnston of Colgate-Palmolive Co., and Charles T. Lipscomb, Jr., of J. B. Williams Co., Glastonbury, Conn.

Philip C. Smith of Yardley of London, Inc., New York, was reelected treasurer and William F. Denney, Jr., of Frances Denney, New York, was reelected secretary of the association.

New directors elected to serve a three-year term are: John W. Cawley, president of George W. Luft Co., Long Island City, N.Y.; Carl W. Gardiner, vice-president of Elizabeth Arden Sales Corp., New York, and D. H. Williams, assistant to the president of Sterling Drug, Inc., New York.

Directors whose term expired in 1956 but who were reelected for another three-year term are: Robert E. Schwartz, vice-president of Wildroot Co., Buffalo,

N.Y.; Benson Storfer, president Parfums Corday, Inc., New York, and L. B. Whitehouse, Sr., Morton Manufacturing Corp., Lynchburg, Va.

Elected directors representing associate members for one year were: Gert Keller, president, Schimmel & Co., New York, and Dr. Lloyd Hazelton, president, Hazelton Laboratories, Falls Church, Va.

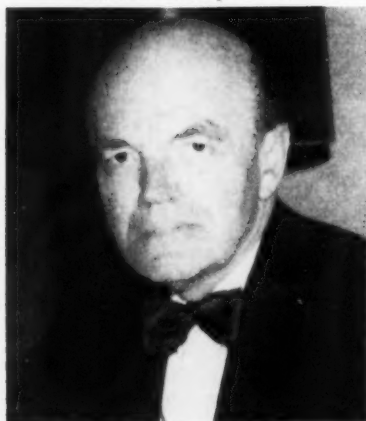
The first session of the meeting, presided over by Albert E. Richie, vice-president of Wildroot Co., Buffalo, opened with the president's address of welcome by John A. Ewald. This was followed by a session on management. The first speaker, Will A. Foster, vice-president of Borden Cheese Co., New York, discussed "word-of-mouth salesmanship," a new term for the old idea of "word-of-mouth-advertising." Mr. Foster's talk was entitled, "Pardon Me, Your Sales Slip Is Showing."

"Word-of-mouth salesmanship is the most important element in sales today," Mr. Foster said. "It is sales help for which you do not pay."

Mr. Foster pointed out that the first step in building this asset is to teach its value and importance to those who work for you and stressing that not only employee loyalty but employee loyalty plus enthusiasm is the important factor.

Today the consumer is more fickle than ever before and brand loyalty as a buying factor has been

S. L. Mayham.
Executive vice-president



H. D. Goulden.
Scientific Director



greatly reduced in importance. The proliferation of new products, new packages and new buying habits is largely responsible for this. Whereas the daughter formerly used products because they were used by her mother, this is no longer the case. Today even the older women are choosing new products, partly because women are more daring.

In addition to getting word-of-mouth salesmanship without paying for it through employees, this can also be done through their wives and families. Mr. Forster also counselled cultivating employees, emphasizing that loyalty should never be taken for granted. Thoughtfulness to employees, customers and suppliers is an uncompensated benefit of great value, according to Mr. Foster.

Check to see if your purchasing department is courteous, prompt and fair in dealing with supply salesmen.

A second way to get salesmanship without paying for it is to cultivate present customers and users. The primary function of advertising should be to keep customers happy and satisfied. In handling complaints, by mail, Mr. Foster suggested answering with a two page letter in a personally addressed envelope. In handling complaints by mail, express a sincere interest in adjusting the complaint to the customer's satisfaction; apologize for the error; get the facts and have the customer express his satisfaction in the adjustment of the complaint.

Endorsements of your product via word-of-mouth salesmanship by impartial agencies, such as government bureaus, professional people, beauty and barber shops, etc. are also very helpful, Mr. Foster said.

Motives that build uncompensated salesmanship listed by Mr. Foster include: a desire to share, a desire to help, a desire to impress, a desire to justify, a desire to belong and a desire to boast.

Public relations and advertising can get these forces to work for you, Mr. Foster said. The ob-

ject of public relations is to prime the tongues of people who are going to say something favorable about your product.

These qualities should be present in advertising, Mr. Foster pointed out: credibility, believability, truthfulness, newness, humanness, naturalness, realness, sincerity, helpfulness, conviction, desire to own and desire to use.

New Store Displays

A SERIES of new ideas in store displays were shown and explained in a presentation by Joe Leigh, chairman of the board of Einson-Freeman Co., Long Island City, N.Y. Mr. Leigh's presentation was entitled, "What the Toilet Goods Industry Can Learn about Displays from Other Fields." Impulse buying—unplanned purchases—is on the increase, according to Mr. Leigh, having gone up from 36 percent in 1949 to 49 percent of total sales in supermarkets last year. To take advantage of this trend many new packages and displays have been developed.

Displays created and designed for a variety of products were shown, demonstrated and explained by Mr. Leigh. Included were a cardboard barbecue pit which stressed selling of related items; a single giant package dominating a display for attention getting; a hand holding a single can of "Pride" wax projecting from a shelf display as an attention getter; gondola arches

reaching over store aisles from one display counter to another and carrying empty packages for easy visibility from all part of the store; a "health and beauty" sign over a toilet goods display to show where products of this sort are located in the store; a special display board to carry the store's own advertising which can be hooked onto a gondola display and adjustable to various heights; a panoramic display made of wire and corrugated paper which can be put together by the store manager or display man to create displays of different sizes and types for windows, walls or counters; and finally three counter cards on which one model is reproduced in three different hair shades for a hair coloring product. New types of mobile displays were also shown which were operated by small flashlight batteries. A feature of some of these is the fact that the mechanism is raised sufficiently to be out of reach of the average shopper.

Counter and floor merchandisers and mass merchandise displays that spur pickup sales and impulse buying were among Mr. Leigh's "success story" exhibits. Each, he pointed out, represented a sound sales idea that could readily be adapted, with the expectation of corresponding success, by advertisers in the toilet goods industry.

"What It Takes to Be a Manager" was the subject of a talk by John M. Fox, president of Minute-Maid Corp., New York. Mr. Fox pointed out that the days of the individual or "prima donna" manager are receding into the background, and that modern business needs management teams. He listed the six foremost qualities that should be present in a man destined to command in business. The first, he explained is creative ability. This should be coupled with judgment and sound thinking. Creative ability can be developed by the individual, who should take every opportunity that presents itself to build and execute his judgment. Administrative skill, the speaker indicated, is a third quality. The company ex-

Kathryn Fitzpatrick.
Newly elected executive secretary



ecutive must be able to foresee the needs of his operation and forecast its requirements in men, materials, time and money. A fourth important quality in a manager is a positive attitude. The manager must be optimistic and must radiate confidence and enthusiasm. A further important weapon against worry and pessimism is faith in the people who have been assigned important jobs, faith in oneself and faith in God.

A fifth quality to be sought is courage. A manager must be a man who will gamble, not in the Monte Carlo sense of the word, but in the sense of taking a risk, perhaps before all necessary facts and data to make a risk free decision are at hand.

FOLLOWING a discussion of "What Toilet Goods Ads Mean to Women" by Howard A. Stone, president of Daniel Starch & Staff, Mamaroneck, N.Y., the technique of "Brainstorming" was discussed by Willard Pluethner, vice-president of Batten, Barton, Durstine and Osborn, New York advertising agency. The aim of brainstorming, according to Mr. Pluethner, is to get more ideas out of more people about products. Brainstorming, developed by Alex F. Osborn, former partner in BBDO, is best conducted at a meeting at which food is served, either at breakfast, a coffee break or a luncheon. The panel chairman must be a "gregarious fellow who likes people and can produce ideas." In brainstorming a single problem, such as the naming of a new product, should be considered. At the meeting different people from different departments should be invited. However, Mr. Pluethner emphasized that the boss should not be present. About one third of those attending the meeting should be women. Two days in advance a notice of the meeting, with the subject to be discussed, should be sent out. Previously a one page memo giving the problem and possible solutions should be sent to all those planning to attend. The day of the

meeting the chairman's secretary should check a few hours before it is to take place to remind those scheduled to attend when the meeting will be held. The secretary at the meeting listens and takes down all the ideas presented, numbering them, but giving no credit to those making the suggestions. The ideas should later be screened and the best ones shown to the boss. Never show him the entire list of ideas, Mr. Pluethner cautioned.

The four Osborn rules on brainstorming as outlined by Mr. Pluethner include: 1.) Judicial judgement is ruled out, i.e., criticism of ideas must be withheld until later; 2.) Free wheeling is welcomed. The wilder the ideas the better. It is easier to tame down than to think up; 3.) Quantity is wanted. The greater the number of ideas, the more likelihood there is of getting good ones; 4.) Association of ideas. When an idea is submitted others can make suggestions based on that idea. This is referred to as "hitch-hiking."

A demonstration of the technique of brainstorming participated in by members of the audience followed Mr. Pluethner's talk.

A session on packaging, the morning of May 16, featured a talk by Albert R. Jasuta, Bristol-Myers Co., on "How a Product is Developed from a Packaging Standpoint." The transition from the idea to the production line stage features a statement of the problem; presentation of possible solutions; evaluation, testing and preliminary costing; development of sources of supply; final costing on both materials and methods; rating of potential packages followed by a choice; and, lastly, the preparation of specifications to the mutual satisfaction of both supplier and user.

F. L. Adams, manufacturing manager of Avon Products, Inc., discussed the operations of the small cosmetic plant and pointed out ways in which it could operate more efficiently. He discussed this efficiency under three headings: 1.) supervision; 2.) lay-out, space and flow

of work, and 3.) materials handling equipment. The talk was illustrated with color slides showing many of the machines used when a plant is converted from hand operation to semi-automatic and from semi-automatic to fully automatic operation.

"Efficiency and Economy in Packaging Operations" was discussed by William T. Ropp, president of Pack-It, Inc. He pointed out that help should come from within the organization of packagers, by way of closer working relations between management, sales and production people.

He further recommended helping each other within the framework of the T.G.A., i.e., a person with a problem should feel free to call on other member companies for production help and suggestions, recommendations as to types of equipment, etc.

Mr. Ropp also emphasized that members can take advantage of custom packagers to their mutual advantage and told how to work with custom packagers, what may be expected of the customer and what may be expected of the packager.

Winners at the annual Toilet Goods Industry Golf Tournament held at Winged Foot Golf Club, May 14, included Lou Brennersholtz of Yardley, Ltd., who won the Cecil Smith Trophy; Burt Sauvageot of Hazel Atlas Glass Co., winner of the B. M. Douglas Trophy; Peter L. Forsman of C. H. Forsman Co., who won the B. E. Levy Trophy and M. Lynch of Park & Tilford, winner of the Century Trophy, donated by the Canadian Toilet Goods Association.

Prize winners of the Charles S. Welch Memorial Essay Contest, sponsored by TGA at the Amos Tuck School of Business Administration of Dartmouth College, included: first prize, Tom Byrne for his paper: "Make-Up and the Girl in the Gray Flannel Shorts." The second prize winning essay, "Make-up; The College Girl's Secret Love or Hate," was written by Wolfgang Thumb.

Soap Making Improvements

By F. V. Wells

PART II

AND so back to the kettle department. The first factor to consider is the use of alternative raw materials. Here one has to take into account the relative advantages and disadvantages of using fatty acids in place of the natural fats. So much depends on the circumstances of production and prevailing market conditions, that an adequate summary in a brief survey of this kind is out of the question. I will therefore confine myself to the following comments. At the present time, distilled fatty acids are used only on a very restricted scale in the U. K. for the purpose of making soaps commercially, but they have proved of great interest in the cosmetic and other industries where soaps produced *in situ* form only a part of the finished formula. The advantages offered by distilled fatty acids include ease and speed of neutralization, replacement of caustic alkali by soda ash etc., the availability of a wide range of fractionally distilled f.a. blends, and the possibility of making a much greater volume of soap in any given kettle. Disadvantages may include cost and quality factors (though these are not always present), but probably the worst drawback of the more commonly used fatty acids is their proneness to deteriorate on storage. Natural fats, on the other hand, can be effectively cleaned up in the normal process of soapmaking, with the result that it is easier to guarantee the quality of a glyceride soap than one made from stored fatty acids.

The Krebitz, Twitchell and Autoclave processes may be mentioned in passing. In the first, a

calculated quantity of calcium oxide is slaked with water and emulsified with the fat at about 100°C with live steam. After standing for a day the cooled and solidified lime soap so formed is ground and leached with water to remove glycerine. The washed lime soap is then converted into soda soap. The process is unsuitable for good quality soaps and is, moreover, both tedious and cumbersome. The advantages and disadvantages of the much superior Twitchell process, which depends upon hydrolytic decomposition accelerated by the presence of a Twitchell reagent or catalyst, have been adequately summarized in the literature.¹² The semi-continuous Autoclave or digester process can, if properly handled, prove far more satisfactory in practice than either of the foregoing. I have seen this process in use and am prepared to agree with Thomssen and McCutcheon that "the advantage of autoclave saponification over the Twitchell process is that a greater cleavage of the fats and oils results in a saving of time and money. The glycerin thus obtained is also purer and of better color than that obtained by Twitchelling the fats." The soap can also be of better quality. Here the proportioned fats and oils are heated and fed under pressure into the lower part of a splitting column, while hot water under pressure is supplied to the upper part. The glycerine is recovered, and the fatty acids split off by the reaction are either saponified immediately or after distillation. The soap is finally adjusted in a crutcher and then solidified in cooling presses or otherwise dealt with. Palmason consid-

ers that "the system is good but a high capital cost, particularly in steam-raising plants, limits its use to large factories." The older literature on saponification under pressure has been adequately summarized,¹³ while more recently perfected methods have been described in the patent literature (and notably that relating to continuous or rapid methods of soap production.)

The alcoholysis of fats is the basis of a U. S. patent awarded some years ago to Bradshaw, Meuly and E. I. du Pont de Nemours.¹⁴ It is of considerable academic interest in that it describes saponification via methyl ester formation, with high direct glycerine recovery.

The next step, from choice of raw materials to kettle room and boiling process, also has its controversial aspects. It seems rather odd that the problem of the optimum shape and size of soap kettles should never have been adequately resolved in print, but no doubt personal preferences have largely depended upon (a) familiarity of use and (b) suitability to the building layout and type of procedure employed. In his otherwise excellent contribution on the countercurrent wash system in soapworks practice, W. J. Govan Jr.,¹⁵ unfortunately gives no indication of the dimensions of the kettles used, though he does certainly specify their approximate capacity. In the U.K. a countercurrent system now in use employs relatively shallow kettles, as these have apparently been proved to give the best results. In collaboration with a soap chemist of long experience, Mr. N. G. Weir, I have elsewhere referred to the respective merits of cylin-

dricul, squared-up, deep and shallow kettles.¹⁶ On balance, "round" kettles seem to be preferable to "square," except that the latter require less floor space. Deeper kettles also save space and, as compared with shallower types of equal capacity, permit more efficient recovery of good soap from nigre. On the other hand, I am prepared to believe that shallower kettles offer greater ease of control and speed of working when a countercurrent system is being operated.

The first published mention of such a system was made in 1929 by E. T. Webb,¹⁷ who pointed out the overall saving in costs to be derived from transferring the lyes from one kettle to another in a cyclical series of washes. Govan, introducing his own detailed system of countercurrent washing, later agreed that the older individual or single kettle type of washing procedure is still much used where the number of kettles is limited and various grades of stock must be handled without the possibility of contaminating good soap stock by countercurrent washes from poorer soap stock. On the other hand, he pointed out, this individual system has one major drawback, viz., production of a relatively large amount of spent soap lye compared with the amount produced in countercurrent systems. Consequently, in the individual wash system, labor, material, and steam costs for evaporating spent lye to crude glycerine, are often double those in the countercurrent system, this placing the former at an obvious economic disadvantage.

We may at this point conveniently turn back to a consideration of the "jet saponification" referred to in the third of my examples taken from current practice. It may here be noted that this type of procedure is referred to in an interesting British patent.¹⁸ The patent specification condemns the use of kettles with live steam coils as being "of poor mechanical efficiency as a means of promoting the emulsification of the relatively large

mass of fat and alkali liquor." The method of the new invention is described as a short initial agitation of fat and a suitable saponifying agent, followed by a "quiescent period" in which saponification is effected with the heat of reaction of the ingredients involved, followed optionally by a period of further agitation. Heat is preferably supplied to the fat and saponifying agent either before or during their passage through an emulsifying apparatus. The latter contains baffle plates to increase agitation. The fat is continuously emulsified with the saponifying agent by a steam injector in which a jet of steam is injected into continuous streams of fat and saponifying agent so as intimately to mix said streams. Up to about 3 per cent NaCl is added to the caustic liquor in order to increase the fluidity of the soap paste and diminish swelling during saponification. Apparently a "starter" quantity of soap, etc., may be incorporated at the beginning of the process to facilitate prompt emulsification and saponification, as first suggested by Rojdesvensky.

Drying and Finishing

WHAT has happened so far is principally a speeding up of saponification and a more efficient concentration of the lyes. Further improvements become available in the subsequent steps of transforming the soap as made into bars, tablets, flakes and powders. Here all the conventional items of equipment are still used, in the industry, side by side with newer types of drier, plodder, refiner, crusher etc. and the various continuous and semi-continuous plants.

The Italian engineering industry has undoubtedly played a valuable part in rehabilitating the medium-scale soap industry during the post-war years. The method of cooling and drying soap taken from the kettles had long been a tedious and labor-consuming affair. In the Mazzoni process the liquid soap is sprayed by means of a revolving pipe feed, equipped with an appropriate nozzle, on to the inner walls

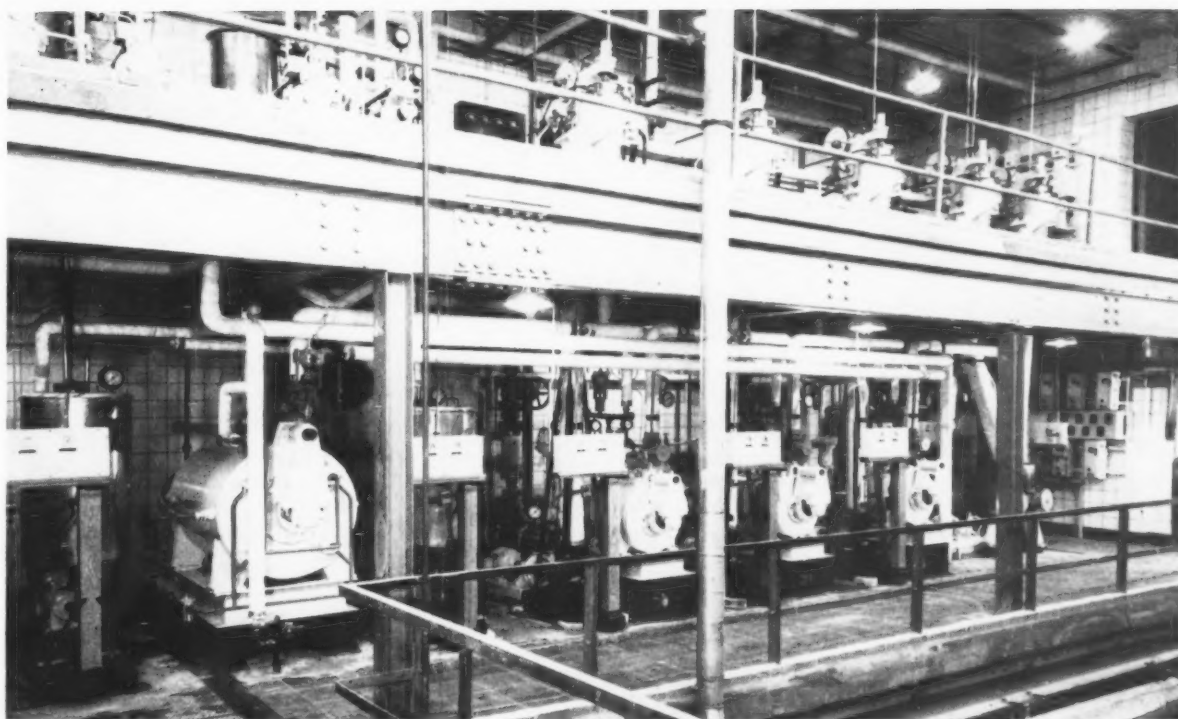
of a vacuum chamber, is thence removed by a rotating scraper, falls to the bottom of the chamber, and is finally extruded through a pressure plate in the form of rods. A typical plant set-up for household bar soap, as installed in a modern European factory, occupies only 21 ft. of space from the center of the plodder to the stamping machine. Well-designed Mazzoni plants are also available for the making of first-class toilet soaps, flakes, etc., but their most striking feature is the way in which moisture content, homogeneity and other factors can be readily controlled at the vacuum chamber stage. I have examined toilet soaps of irreproachable quality made by this process, which is now said to be used in about 120 factories throughout the world.

The Niro spray drier, with its specially designed atomizer, is also worth noting in this connection: as well as the British patent assigned to Baker Perkins, Ltd.,¹⁹ which relates to spray-drying of soap under vacuum, including certain suggested "refinements" such as the optional introduction at the spraying stage of carbon dioxide or fatty acids, to control alkalinity.

At the plodding stage we encounter a variety of improved devices: reduced pressure plodders such as the typical German makes already referred to; refiner-plodders, designed to obviate the need for milling, which force the soap through minute holes in a die plate; and the more recently introduced "micro-processor" of U. S. origin, which mills and extrudes under very high pressure. Nor should one overlook the novel design and good performance of the Meccaniche Moderne all-liquid-phase cooler-extruder, which among other things obviates air-occlusion.

Spray towers for soap and synthetic detergent powders are a subject in themselves and can only be mentioned in passing.

The filling of hot soap direct into cartons has interested firms on both sides of the Atlantic but now seems to have faded right out of



Sharples continuous soap making process which operates on the same chemical principle as the full boil kettle process. Centrifugals are employed to separate soap and glycerine in each of the four stages.

the picture. It is nevertheless typical of that broader view of soap-making which is continually on the look-out not only for novel, cost-reducing methods of manufacture but also for novel, sales-stimulating presentations.

The application of chemical engineering principles to the conventional practice of soap production also continues to find a profitable outlet. Considering, for example, the process of soap washing as a type of liquid-liquid extraction, a British worker has recently described a more scientific approach to the extraction of glycerine from soap lyes, in which he uses the distribution coefficient concept as a means of assessing the efficiency of glycerin recovery.²⁰

Storage and movement of materials and transport in all its many, important aspects come outside the scope of this discussion, but attention may well be drawn here to an informative speech on Transport delivered by Lord Heyworth, chairman of Unilever Ltd., in 1955.²¹

I cannot conclude this brief

survey, however, without some reference to the important part played by the newer continuous soap processes at the higher levels of production. We have already glanced at some of the semi-continuous systems that have found useful application even in the not-so-large factories. The smaller soapmaker, when investigating the possibilities of any innovation in his existing process, will doubtless bear in mind the fact that the old-style batch system has certain advantages of its own. Among these are: (1) that it is suitable for small as well as for large quantities and makes it possible to produce a large number of different types of soap; (2) that the nature of the batch process involves the removal of most of the impurities present in the original fats and permits the use in most cases of commercially second grade or low class fats; (3) it gives, if required, a reasonably high yield of glycerine; (4) it allows for the adjustment of the final product, i.e. the neat soap, to a high degree of accuracy in respect of the fatty acid and free alkali content. This point

is of real importance in regard to bar soaps, though of much less importance in respect of powders; (5) scientific control is not exacting.

The Monsavon soap process, evolved in France, contains several interesting features, all of which are very cleverly co-ordinated in the complete set-up. The emulsification of fat and alkali is accomplished by means of a colloid mill or special saponification device, situated at the top of a tall, narrow, water-jacketed homogenizing tower. Saponification goes rapidly to completion, the stream of hot soap passing into a small, buffer-stage tank and thence to the countercurrent washing tower. The latter is divided into four compartments, each fitted with an unusual type of horizontal mixer and having adequate space for soap and lye separation. The soap moves upwards through the tower, receiving four intimate lye washes in transit, and then passes to the top to be fitted, sampled and continuously settled in an adjacent tank. The lye, in its downward course, takes up glycerine from the soap and, accumulating at the bottom of the

tower, is pumped off at a controlled rate. The Monsavon process is essentially simple in character, flexible, adjustable and capable of producing an excellent quality of soap. The design of the plant is highly ingenious and full of mechanical aids to smooth, trouble-free working.

The Monsavon process has aroused the interest of some of the largest soapmakers in the world. It is the subject of patents in most countries. The original Paris plant is reputed to have a capacity of 2 tons per hour, and has been used for some years in the production of toilet and household bar soaps, flakes and powders.

The Sharples process and centrifugal separation generally have been mentioned. The high temperature and pressure process devised by C. M. Adcock²² has a certain academic interest, but has never attained anything like the prominence of the Clayton process, which it to some extent resembles. The latter is likewise an improved modification of the autoclave method, in which saponification is carried out at a high pressure (250 p.s.i.) and high temperature (226°—290°C.), the soap being sprayed into a vacuum chamber where the glycerine and water are flashed off. The soap so recovered is initially in a practically anhydrous form and the glycerine highly concentrated. R. T. Sheen, in an informative summary of the Clayton process,²³ observes that glycerides and fatty acids are heat-sensitive materials, especially at temperatures higher than those that prevail in kettle boiling of soap. Decomposition of these materials is a function of time and also increases markedly with increase in temperature. It is therefore imperative that these materials be heated rapidly in a closed system away from air, and that saponification should be practically complete when the reaction mass reaches high temperature to avoid danger of discoloration owing to presence of unsaponified fat. Properly proportioned amounts of oil and alkali

solution must therefore be present at all times with enough alkali present to combine with the glycerides. From Mattikow's description of the process²⁴ it appears that the temperature of the soap drops to very little more than 100°C by the time it is first exposed to the air. The advantages of a production cycle taking only a few minutes and ensuring the rapid discovery of glycerine by volatilization are sufficiency obvious. The chief problems would appear to be those associated with temperature control, correct proportioning and residual alkali. A system somewhat similar in many respects to the Clayton process is described in the patents assigned to Lorenz.²⁵

McCutcheon has pointed out that still another method reacts the alkali and fat in a nonaqueous medium, such as kerosene (U. S. Patents 1,753,659, 1,813,454, and 2,380,650). The kerosene solvent-fat-alkali mixture is sprayed into a vacuum chamber as in the case of the Clayton process, and the separation of solvent, water, and glycerol from anhydrous soap is made. Also J. K. Gunther in U. S. Patent 2,401,756 describes a similar type of process. Doubtless some of these methods, he adds, may be used in the future when technical difficulties have been overcome.²⁶

I have not had the opportunity of seeing the Victor Mills continuous soap process at work at the factory in West Thurrock, England, as the plant was not fully operating on the occasion of my last visit some years ago. As most readers will, however, be aware, this process consists essentially of continuous hydrolysis of fat by water at high temperatures and in the presence of a catalyst, followed by continuous distillation of the fatty acid produced and continuous neutralization of the distilled fatty acid. The soap produced is worked up into bars, flakes or powders by the methods normally applicable to kettle soap. The principal advantages of the process over the conventional kettle process are that white soaps can be produced from low-grade fat

stocks without any pre-treatment of the fats and there is improved glycerine recovery. The process also has all the advantages of a continuous process over a batch process in economy of space and manpower, and in the fact that it is under very close control, so that the re-working of large batches of off-standard product is completely eliminated.²⁷

Reference should be made, in conclusion to the important Emery-Colgate process; and to the extensive patent literature that exists in this fertile field of process development.

The advances made during the past few decades have been due primarily to a clearer understanding of the science and technology of soapmaking processes: this, in turn, has led to the lowering of steam costs, improved glycerine yields, better quality soaps at lower cost, and savings in time and labor. Last, but not least, has been the influence on soap fashions of consumer requirements, which are themselves continually modified by the introduction of such new factors as washing machines, novel fabrics, changing modes of existence and—of course—alternative detergents.

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Cosmetic Chemists Meet

Discussion of formulation of aerosol hair sprays highlights spring meeting

A study of "Some Practical Problems in the Formulation of Aerosol Hair Sprays" was presented by H. R. Shepherd of Aerosol Techniques, Inc., Bridgeport, Conn., before the annual spring meeting of the Society of Cosmetic Chemists, May 18 at the Biltmore Hotel, New York. Hair sprays have been adopted by the consumer as a cosmetic staple, Mr. Shepherd said.

To make a good aerosol hair spray seven possible components must be correctly selected and formulated: film forming constituents, plasticizers, hair conditioners, humidity modifiers, emulsifiers for water insoluble films, perfume, and propellant. The formulation must be compatible with the container and valve selected to dispense the product. At least six types of film-forming constituents may be considered by the hair formulator. A hair lacquer based on shellac and PVP was used by the speaker to illustrate the problems encountered. The water insolubility and hardness of such a shellac based lacquer can be modified by the addition of glycol dilaurate 200 and castor oil. These additives improve luster and plasticity of the film. Lanolin may be incorporated as a hair conditioner. The fundamental problem is presented by the shellac itself which is a natural product and therefore basically non-uniform. It tends to precipitate out during or after filling. The formulation should for this reason be compounded before filling and be stored in concentrated form for at least a week. Solids in the product should not exceed two to

three percent. Another difficulty is presented by the moisture sensitivity of PVP. Using 50 percent PVP, films are tack-free, at 70 percent they are tacky. The presence of glycerol increases tackiness. Tack-free films are formed in the presence of "Santicizer E 15," CMC, and similar substances. Mr. Shepherd stressed the importance of a good hair conditioner to the characteristics of the final product and added that the incorporation of "Lanogene" minimized precipitation. Test methods employed to rate aerosol hair sprays include evaluation of the film on the hair and on plate glass.

A paper entitled "The Measurement of Static Charge on Hair" by Hyman Henkin, Clarice M. Mills, and Virginia C. Ester of Colgate-Palmolive Co., New York, was read by Dr. Henkin. Use of a creme rinse after shampooing substantially reduces the static charge on hair *in vivo* and *in vitro*. Comparative results between shampoos regarding effect on static charge generation were found to be largely inconclusive. Methods leading to these conclusions measure the relative electrostatic charge production on hair *in vivo* and *in vitro*. The measures are sought as a standard of hair manageability in which static plays a major role. Two tresses suspended in a chamber of constant humidity, one cream rinsed and one treated with a plain shampoo were combed and the charge on each was recorded by an oscillograph-polaroid camera set up. The voltage on the comb was measured which equals that on the hair. *In vivo* tests based on the

same techniques showed the anti-static effect of the rinse to remain noticeable for four to five days. No effect was demonstrable on the eighth day. A cationic creme rinse was used, but superfatted nonionics are also under study. Relative humidity was found to play a major part in the build up of the charge. The mechanism of the rinse effect is not completely established. Probably reduced friction makes for low charge build up.

Possible use of iodophor shampoos on pets and humans was the subject of a paper entitled "The Use of Iodophors in Cosmetics" by Abraham Cantor, Sylvia Most and Morris Shelanski, Industrial Toxicological Laboratories, Philadelphia. The paper was read by Dr. Most. Iodophor shampoos are suggested for therapeutic and prophylactic application to the scalp of humans and pets to combat pathological conditions induced by the invasion of micro-organisms. The most common disease said to respond to the fungicidal properties of iodine and of iodophors in particular is ringworm of the scalp. Low toxicity and absence of irritation combined with good absorption characteristics on fibers are claimed for iodophors. PVP and nonionic surfactants were found to be suitable carriers, but great care must be taken in the choice of a carrier since compatibility varies even within the same series of surfactants such as the "Plurionics."

Absorption by the hair was found to be influenced by hair color, time of contact, pH of the solution, and concentration of the product.



White hair was shown to be most absorbant. West Disinfecting Co. Long Island City, N. Y., makes an iodophor shampoo for pets. It is available in experimental quantities.

A report on "Laboratory Evaluation of Potential Caries-Preventive Agents in Dentifrices" by S. D. Gershon, O. W. Neiditch and D. J. Martin, Lever Brothers Co., New York, was presented by Mr. Neiditch. A novel method for *in vitro* screening of potential caries-preventive agents was developed to cut the cost and time involved in controlled clinical studies. The evaluation procedure is based on the most generally accepted cause of tooth decay, acid decalcification of the calcified tissues of the teeth. A protein adsorption test, referred to as the "Modified Casein Test" was developed which permits quantitative evaluation of protein substantivity and subsequent acid-inhibition ability of these agents. This test can be applied to compounds in aqueous solution and to dentifrices incorporating the compounds. This

(Turn to Page 205)

At Spring Meeting of the society of Cosmetic Chemists, May 18, SCC president George G. Kolar (right center) presents to Dr. Walter B. Shelley (left center) a scroll honoring the dermatologist for his contributions to basic knowledge of odor formation. The annual special \$1000 award is given by the Society to the author whose recent scientific papers offer the greatest potential advance to cosmetic science. Observing ceremony are Dr. Frederick D. Weidman (left) of the University of Pennsylvania and Sabbat J. Strianse, president elect of the Society.

Speakers at recent SCC meeting (center photograph are, front row l. to r.: Dr. Paul W. Jewel, Dr. Sylvia Most and Edward Sagarin. Rear row, l. to r.: O. W. Neiditch, Dr. H. Henkin, Ross Whitman and SCC program chairman, Raymond E. Reed. H. R. Shepherd, who also spoke, was absent when photograph was taken.

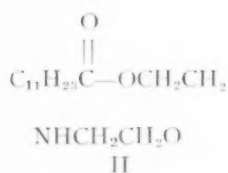
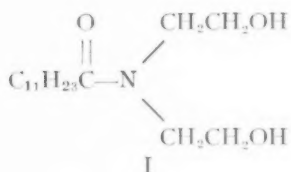
Commissioner George P. Larrick (center) of the Food and Drug Administration, receives an honorary membership from SCC president George G. Kolar (right). Looking on is Stephen L. Mayham, executive vice-president of the Toilet Goods Assn., also one of the seven honorary members of the Society.

TGA Scientific Section Meets

Papers on shampoo evaluation and dispensing powders from pressurized containers are heard during one-day session at annual TGA meeting

A PAPER dealing with "Problems in Dispensing Powders from Pressurized Containers" by Victor DiGiacomo of Givaudan-Delawanna, Inc., New York, was one of the highlights among eight presentations before the scientific section of the Toilet Goods Association, May 12. Mr. DiGiacomo's paper appears in full beginning on page 164 of this issue.

"The Chemistry of Lauric Acid-Diethanolamine Condensation Products and Their Analysis" was the title of a report by Harry Kroll of Geigy Chemical Corp., New York. The data presented were concerned with the condensation products of higher molecular weight carboxylic acids with diethanolamine and the meaning of their characteristics in the compounding of detergents and cosmetics. Lauric acid reacts with diethanolamine at temperatures above 140°C to give as an initial product, N,N-dihydroxyethylauramide (I) which undergoes a rearrangement at the temperature of the reaction to the amine ester (II)



Subsequent reactions of the amine

ester with either lauric acid or diethanolamine determines to a large extent the nature of the final product. The water-soluble condensation product is the result of reacting two moles of diethanolamine with one mole of lauric acid. Examination of the reaction product by standard methods discloses six different components: approximately 70 percent of lauric diethanolamide, and small amounts of ester amine, ester amide, fatty acid, uncondensed diethanolamine, and small quantities of piperazine derivatives.

By stepping up to 90 percent content of pure lauric diethanolamide the characteristics of the product and its fields of usefulness can be changed. By increasing lauric diethanolamide content, viscosity is raised while solubility and compatibility with electrolytes decline.

"Shampoos — A Practical Method of Evaluation" by W. G. Fredell and R. R. Read of Lambert-Hudnut Division, Warner-Lambert Pharmaceutical Co., New York, dealt with an *in vivo* method of determining lathering power of shampoos and a laboratory method for investigating soil or residue deposition, resulting from the use of a shampoo. Lather is not a measure of efficiency according to the authors. The importance of absence of residues to the good appearance of shampooed hair was stressed. Chief lather suppressing agents are soil and hairdressing present on hair and scalp. It was attempted to standardize a measure for lathering power of shampoos. *In vivo* tests were conducted with 250 men. Two cc of standard soil were applied. The soil contained anhydrous lanolin and

mineral oil. 0.25 grams of shampoo was used on wet hair. If this amount did not produce lather it was increased until satisfactory lather appeared. Records were kept of the amount of each shampoo required. Lather was evaluated for permanency. The hair was rinsed and dried. *In vitro* tests for residue and soil deposition were conducted with four different shampoos on hair swatches which had recently been given permanent waves. Towing was found an important factor in removing residue from the hair.

Other presentations included "Axillary Perspiration, Odors and Deodorization" by W. G. Fredell and R. R. Read; "Toxicity Studies on Monoethanolamine Thioglycolate Cold Waving Lotions" by Ross Whitman and Martin G. Bookins, Rayette, Inc., St. Paul, Minn.; and "Azulene and Its Derivatives" by H. K. Thomas and H. G. Gribou, Dragoco, Ltd., Holzminden, Germany. Azulenes were described as a special group of hydrocarbons present in essential oils and causing the blue or greenish tint of these oils. Cham-azulene and guai-azulene exhibit anti-allergic and other pharmacological properties and are capable of counteracting the irritation of sensitive skin by certain constituents of essential oils.

A study on "The Physicochemical Characterization of Essential Oil Constituents and their Derivatives by Modern Instrumentation Techniques" by Leo Levy and James L. Thomson, Food and Drug Laboratories, Department of National Health and Welfare, and James C. Evans and Harold Bern-

stein, National Research Council, and S. A. Forman and Norman M. Miles, Department of Agriculture, all of Ottawa, Canada, was read by Dr. Levi. Potentialities of infrared and Raman techniques for differentiating molecules of closely allied structures were illustrated and the value of X-ray methods in the identification of terpene derivatives was shown. Electronic and molecular spectra as well as the optical crystallographic properties of compounds particularly interesting for the essential oil chemist were described. Data assembled are sufficiently specific to serve as reference standards for the establishment of qualitative and quantitative test methods designed for control in the manufacture of synthetic aromatics and for the detection of adulteration in food, drugs and cosmetics.

"The Sphere of Research" by Paul G. I. Lauffer, George W. Luft Co., Long Island City, N. Y., showed the essential unity of all biological knowledge. Dr. Lauffer mentioned protein structure and enzymatic action among the biological questions to which we have only very incomplete answers. Any progress made in these fields will have great meaning in cosmetics and other specialties fields and may eliminate part of the expensive and time consuming screening tests applied today. Such progress will also enable the U. S. Food and Drug Administration to devise more reliable, more effective, and speedier methods by which to evaluate positive and toxic effects of new materials.

The scientific section elected Emil G. Klarmann, Lehn & Fink Products Corp., as its new vice-chairman. Orville Davenport of Avon Products, Inc., last year's vice-chairman, automatically becomes chairman of the section, succeeding Dan Dahle, Bristol-Myers Co., whose term as chairman expires. H. D. Goulden, scientific director of TGA remains secretary of the section and F. J. Austin was re-elected honorary chairman.

At luncheon Irvin H. Blank,



Irving Blank, left, of the dermatology department of Harvard Medical School, Massachusetts General Hospital, receiving the annual award given by CIBS (Cosmetic Industry Buyers and Suppliers Assn.) from David J. Warner of Fleuroma, Inc., New York, president of CIBS.

dermatology department of Harvard Medical School, Massachusetts General Hospital, received the annual award given by CIBS (Cosmetic Industry Buyers and Suppliers Association). Dr. Blank was presented with a scroll and a cash prize of \$250. The award was made by David J. Warner, Fleuroma Inc., president of CIBS. The award-winning paper is entitled "Mechanism of Agents Used for the Relief of Dry Skin" and was presented at the May 12, 1955, meeting of the Scientific Section.

Record Toiletries Sales

Sales of shaving creams in 1955 have increased 11 percent and dentifrices eight percent over the previous year, it was reported recently by the Toilet Goods Association. Total sales of toilet goods, excluding toilet soaps, during 1955 amounted to \$1,192,200,000 representing an increase of 9.7 percent over the total for 1954. The great increase in shaving cream dollar volume is attributed to the growing popularity of aerosol creams which are more costly per shave than either the lather or brushless creams. Most of the gain in sales both of denti-

frices and shave creams took place in food stores. Aerosol hair sprays also showed a considerable gain. Fragrance products generally remained at the 1954 level.

Business in chain and independent drug stores dropped below 30 percent of total volume for the first time. Food stores accounted for 17.9 percent, department stores and specialty shops, 22.3 percent, and house to house sales represented 20 percent of the sales volume in 1955.

Cowles in Fatty Acid Field

Cowles Chemical Co., Cleveland, recently announced that its fatty acid splitting facilities at Skaneateles Falls, N.Y., are in full production. Animal fatty acid of a grade comparable to the double distilled products being offered commercially is currently being produced, according to R. F. Huntley, Cowles president. While a portion of the output is for captive purposes, an excess supply is being offered to industrial consumers, Mr. Huntley said, who added that the plant is designed to produce other types of acids to customer specifications.



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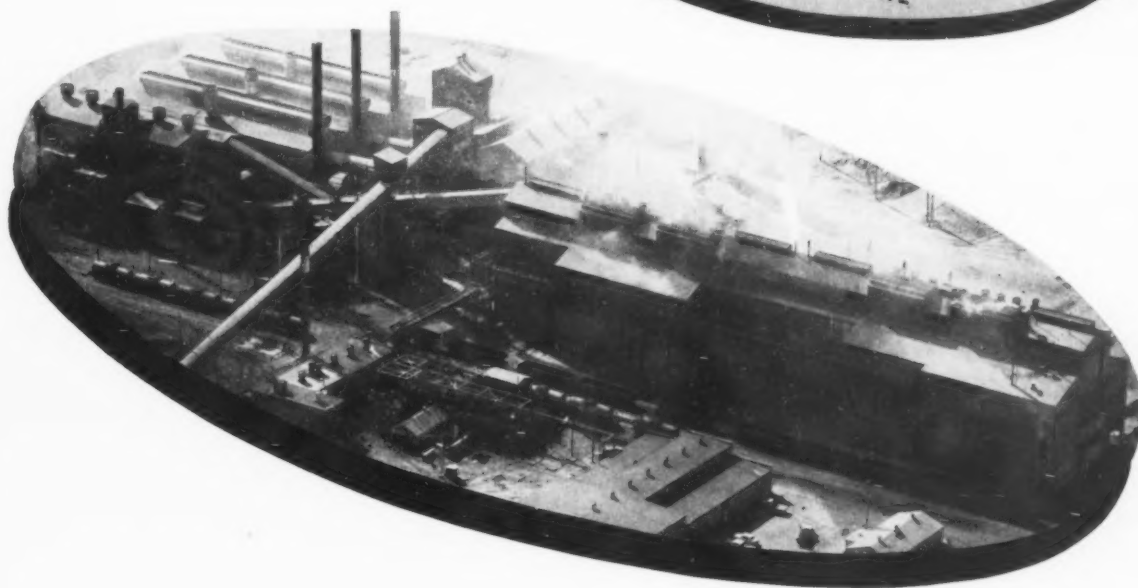
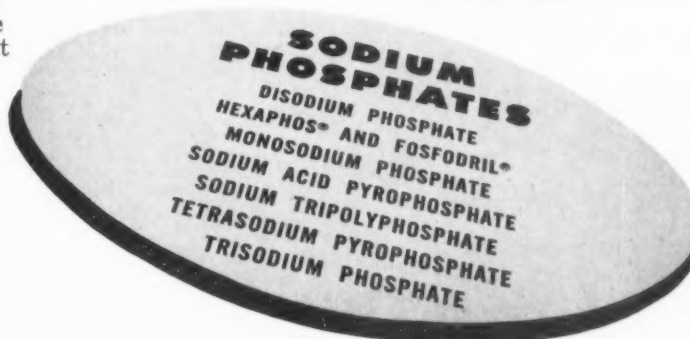
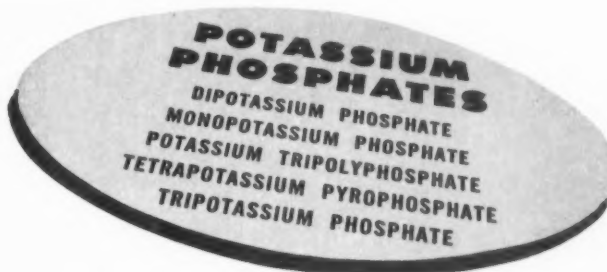
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SOAP and CHEMICAL SPECIALTIES

News

Fels Appoints Jelinek

Frank H. Jelinek recently was named general sales manager of the Fels-Naptha Soap Co., Philadel-



Frank H. Jelinek

phia, succeeding Henry Elser, who has resigned. Mr. Jelinek joined the firm in 1950 as a salesman, advanced to New York district manager, and then to Eastern Division manager in 1955. During World War II, he served as an administrative assistant to General Mathew B. Ridgeway.

Purex Buys Manhattan Soap

Manhattan Soap Co., New York, will become a wholly owned subsidiary of Purex Corp., South Gate, Calif., upon the fulfillment of conditions agreed upon by the two organizations, it was announced in May. Under this agreement Purex acquires all of the stock of Manhattan Soap Co. in exchange for Purex Corp. common stock. Oscar M. Burke and Frank G. Burke, Jr., principal officers and stockholders of Manhattan will remain active in the merged firm. Manhattan's sales force will be retained and integrated with the Purex sales force, according to the announcement.

Three principal products for the household market are manufactured by Manhattan: "Sweetheart" soap, a toilet bar, has been distributed nationally since 1890; "Blu-

White," a bluing product also in national distribution, and "Protex," a deodorant toilet soap bar which is currently being test marketed.

The Purex product line includes "Beads O' Bleach" dry chlorine bleach; "Purex" liquid bleach; "Trend" liquid and dry light duty detergent; and "Old Dutch Cleanser" acquired about a year ago.

Manhattan has three plants located in Bristol, Pa., Omaha, Neb., and Toronto, Canada. Purex plants are located in Los Angeles, San Leandro, and South Gate, Calif.; Tacoma, Wash.; St. Louis, Mo.; Dallas, Tex.; New Orleans, La.; East Chicago, Ind.; Toronto, Can.; Memphis, Tenn.; Atlanta, Ga.; and Sydney, Australia. The firm has packaging facilities in Havana, Cuba; Mexico City, D. F.; and Manila, Philippines.

Pine Tree to Wrisley

Allen B. Wrisley Co., Chicago, has acquired the Pine Tree Products Co., Manchester, Vt., maker of Pine Tree soap, it was announced recently by Wrisley B. Oleson, president. The acquisition is the second made by Wrisley in the last three months. Early in February the company purchased the Iowa Soap Co., Burlington, Ia., which now operates as the Iowa Soap Division of Allen B. Wrisley Co.

McElroy Heads N.I.C.B.

Neil McElroy, president of Procter & Gamble Co., Cincinnati, since 1948, was elected chairman of the National Industrial Conference Board for a term of one year. The election took place at the board's 40th annual meeting held at the Waldorf Astoria Hotel, New York, on May 17.

The P & G president was elected a member of the Conference Board in 1950 and has served as one of its trustees since 1953.

Strianse to Shulton

Sabbat J. Strianse has been appointed director of research for the toiletries division of Shulton,



Sabbat J. Strianse

Inc., Clifton, N. J., it was announced late in May by George L. Schultz, president.

Prior to joining Shulton Mr. Strianse was technical director of the Sofskin division of Vick Chemical Co., New York. Before going with Vick he had served as senior research chemist with Richard Hudnut and had been associated with George Luft Co. He is president-elect of the Society of Cosmetic Chemists.

In his new post Mr. Strianse will head research and development work in toiletries for the domestic and international markets and the development of proprietary pharmaceuticals.

Record Lever Ad Order

Lever Brothers Co., New York, has placed with the Chicago Tribune an advertising order said to be the biggest individual order ever placed with a single paper by any national advertiser. The order calls for \$450,000 worth of full color advertising in the Tribune's Sunday comics magazine. Beginning June 3 the contract covers a total of 104 pages during the next year.



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If you are interested in the physical properties of these versatile compounds, our technical bulletin will give you the information you seek. It describes graphically vapor pressure vs. temperature, boiling points of aqueous solutions, surface tension vs. temperature, specific gravity vs. temperature, specific heat vs. composition, freezing point vs. composition, and other properties.

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Record Soap, Syndet Sales

Combined soap and synthetic detergent sales for the first quarter of this year exceeded sales for any previous quarter since 1948 according to figures published last month by the Association of American Soap and Glycerine Producers, Inc., New York, and collected from reports of 73 member companies. Synthetic detergents now represent 69 percent of the total market, with sales of liquids and solids totalling 694,142,000 pounds valued at \$151,196,000. This represents an increase of 25.6 percent in tonnage and 18.9 percent in dollar value over the figures reported for the corresponding period of last year, which was 552,841,000 pounds, worth \$127,144,000, and an increase of 21.6 percent over the tonnage sales of 570,654,000 pounds reported in the fourth quarter of 1955.

Sales of liquid syndets show a striking growth of 95.3 percent compared with the first quarter of last year and of 38.9 percent over the fourth quarter of 1955. 64,008,000 pounds of liquid detergents valued at \$26,686,000 were sold in the first quarter of this year, against 32,768,000 pounds and \$15,790,000 in the corresponding quarter of last year and 46,072,000 pounds and \$20,055,000 in the final quarter of 1955. Solids accounted for 630,134,000 pounds and \$124,510,000 during the first three months of this year compared with 520,073,000 pounds and \$111,354,000 during the corresponding period of last year and 524,582,000 pounds and \$113,639,000 in the last quarter of 1955.

Total soap sales for the first '56 quarter amounted to 312,214,000 pounds valued at \$74,115,000. These figures represent a drop 7.1 percent in tonnage and of five percent in value over the 335,937,000 pounds and \$78,334,000 reported for the corresponding three months of 1955. However soap sales are up six and one half percent in tonnage and five percent in value, over the last quarter of 1955.

Liquid soap sales dropped from 1,045,000 gallons and \$1,536,-

Total soap and detergent sales reported by AASGP members
in first quarter of 1956

	Pounds	Dollars
Soaps other than liquid	304,078,000	72,511,000
Liquid soaps	1,017,000*	1,604,000
Total sales value		74,115,000
Bar toilet soaps, incl. mechanics	115,239,000	35,072,000
Yellow and other than white laundry bars	11,879,000	1,470,000
White laundry bars	43,554,000	7,651,000
Soap chips and flakes, pkgd.	16,350,000	4,497,000
Soap chips and flakes, bulk	25,366,000	3,028,000
Soap, granulated, powdered, sprayed, pkgd.	51,736,000	12,723,000
Soap, granulated, powdered, sprayed, bulk	22,599,000	2,611,000
Misc. or "other" soaps	793,000	113,000
Shaving soaps	858,000	567,000
Shaving cream	3,605,000	3,330,000
Paste and jelly soaps	3,642,000	496,000
Washing powders, pkgd.	1,105,000	113,000
Washing powders, bulk	4,043,000	336,000
Hand pastes	1,337,000	172,000
Hand powders	2,012,000	338,000
Liquid soaps, other than pkgd. shampoos	974,000*	1,274,000
Shampoo, pkgd.	43,000*	330,000
Detergents, solid	30,134,000	124,510,000
Detergents, liquid	64,008,000	26,686,000
Total	694,142,000	151,196,000
Detergent, solid, other than shampoo, pkgd.	555,732,000	115,215,000
Detergent, solid, other than shampoo, bulk	70,647,000	6,757,000
Detergent, liquid, other than shampoo, pkgd.	6,949,000*	22,792,000
Detergent, liquid, other than shampoo, bulk	821,000*	1,127,000
Detergent shampoos, liquid	1,848,000	2,767,000
Detergents shampoos, solid	3,755,000	2,538,000

*Expressed in gallons

000 in the first quarter of last year to 1,017,000 gallons and \$1,604,000 in the first quarter of 1956. Other than liquid soaps sold at the rate of 304,078,000 pounds and \$72,511,000 in the first quarter of this year against 327,577,000 pounds valued at \$76,799,000 in the comparable quarter of last year.

— ★ —

Raymond Sells in Bulk

Commercial quantities of cosmetic grade sodium lauryl sulfate, quaternary ammonium compound, and thioglycolates are being offered by Raymond Laboratories, Inc., St. Paul, Minn., which announced recently its entry into this field. The firm markets sodium lauryl sulfate under its trade-mark "Pendit WA." The quaternary is used for cationic cream hair rinses. A processing plant for sodium bromate was due to be on stream last month to add another item to the bulk line.

Dow Moves in St. Louis

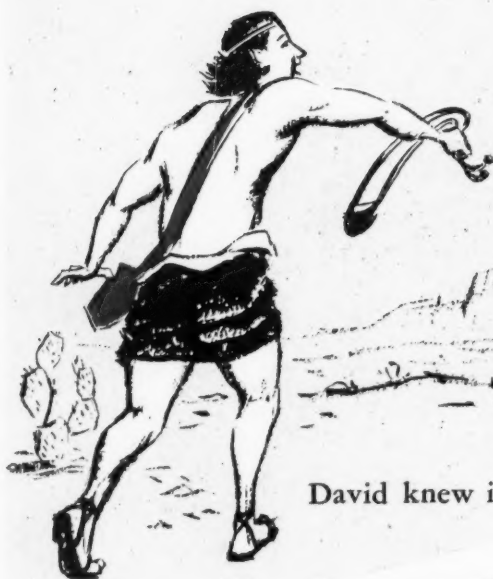
Dow Chemical Co., Midland, Mich., recently moved its St. Louis sales offices to 10 South Brentwood Boulevard, where it occupies an area of about 10,000 square feet. Manager of the office is Glenn H. O'Neal, a Dow veteran of 32 years service. The St. Louis territory covers Missouri, Kansas, Wyoming, western Nebraska, Colorado, New Mexico, Oklahoma, Arkansas, Tennessee, northern Mississippi, western Kentucky, southwestern Indiana, and the southern half of Illinois.

— ★ —

R. K. Smith to Houghton

Robert K. Smith has been named manager of research by E. F. Houghton & Co., Philadelphia, it was announced recently. Prior to his recent appointment he was associated with Houdry Process Corp., Marcus Hook, Pa., as chief of the exploratory section.

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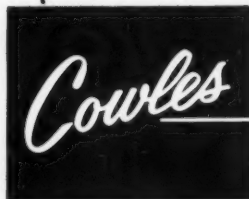
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CHEMICAL COMPANY

CLEVELAND 3, OHIO

Colgate Advances Lindley

Samuel E. Lindley, former field sales manager, eastern region of the Kay Daumit Division of Col-



Samuel E. Lindley

gate-Palmolive Co., New York, has been advanced last month to assistant merchandise manager in Colgate's toilet articles division. In addition Mr. Lindley has been named to the newly-created position of brand merchandising manager for all "Lustre-Creme" products manufactured and sold through Kay Daumit and the toilet articles divisions. Mr. Lindley joined Colgate in 1946 when the company acquired the "Kay Daumit Lustre-Creme" shampoo formula and business. Formerly he had served as a Kay Daumit salesman and continued to work in the southeastern territory for Colgate-Palmolive.

Douglas C. Donley succeeds Mr. Lindley as field sales manager for the eastern region of Kay Daumit. He now makes his headquarters at Colgate's new offices in New York. Prior to this appointment Mr. Donley had worked in the southwestern territory with headquarters in Tampa, Fla.

Ninol Moves Lab, Offices

Ninol Laboratories, Inc., Chicago, announced late in May the transfer of its research and development laboratories to the new Ninol plant on the south side of Chicago. At the same time the business and executive offices were moved to larger quarters in the Loop. The

new address is: Prudential Plaza, Chicago 1.

P&G Stock Split

A two-for-one split in shares of Procter & Gamble Co., Cincinnati, common stock was approved at a special shareholders meeting on May 22. P & G shareholders voted to change the authorized number of common shares from 15 million without par value to 25 million with par value of \$2.00 per share and to change each present outstanding share of common stock into two shares of the new \$2.00 par value stock.

The management of the company will recommend to the board of directors at its July meeting that the regular quarterly dividend rate on the new common stock be 45 cents per share and that the first dividend at this rate be paid August 15, 1956.

In other action, shareholders approved a proposal that 150,000 additional shares of the common stock without par value be released from pre-emptive rights and be set aside and included in the P&G stock option plan.

Hoffman Now V-P

C. B. Hoffman, formerly sales manager of J. M. Lehmann Co., Lyndhurst, N. J., has been elected vice-president, it was announced last month. He will continue in charge of sales. Before joining Lehmann, Mr. Hoffman operated a consulting engineering firm with his brother in Baltimore.

Solvay Doubles New Plant

Solvay Process Division of Allied Chemical & Dye Corp., New York, plans to double the capacity of its mercury cell chlorine-caustic soda plant now under construction at Brunswick, Ga. Carlton Bates, Solvay president, in making the announcement last month, said initial facilities are scheduled for completion late this year. The second step is expected to be ready for operation in fall of 1957.

Baiter in Lever Post

Richard E. Baiter has joined Lever Brothers Co., New York, as merchandising manager for toilet



Richard E. Baiter

soaps, it was announced June 7 by W. N. Burding, marketing vice-president of the Lever Division.

Mr. Baiter had been associated with Standard Brands, Inc., New York, for the past 20 years. He was elected a vice-president in 1953 and was in charge of merchandising all products in Standard Brands' grocery division.

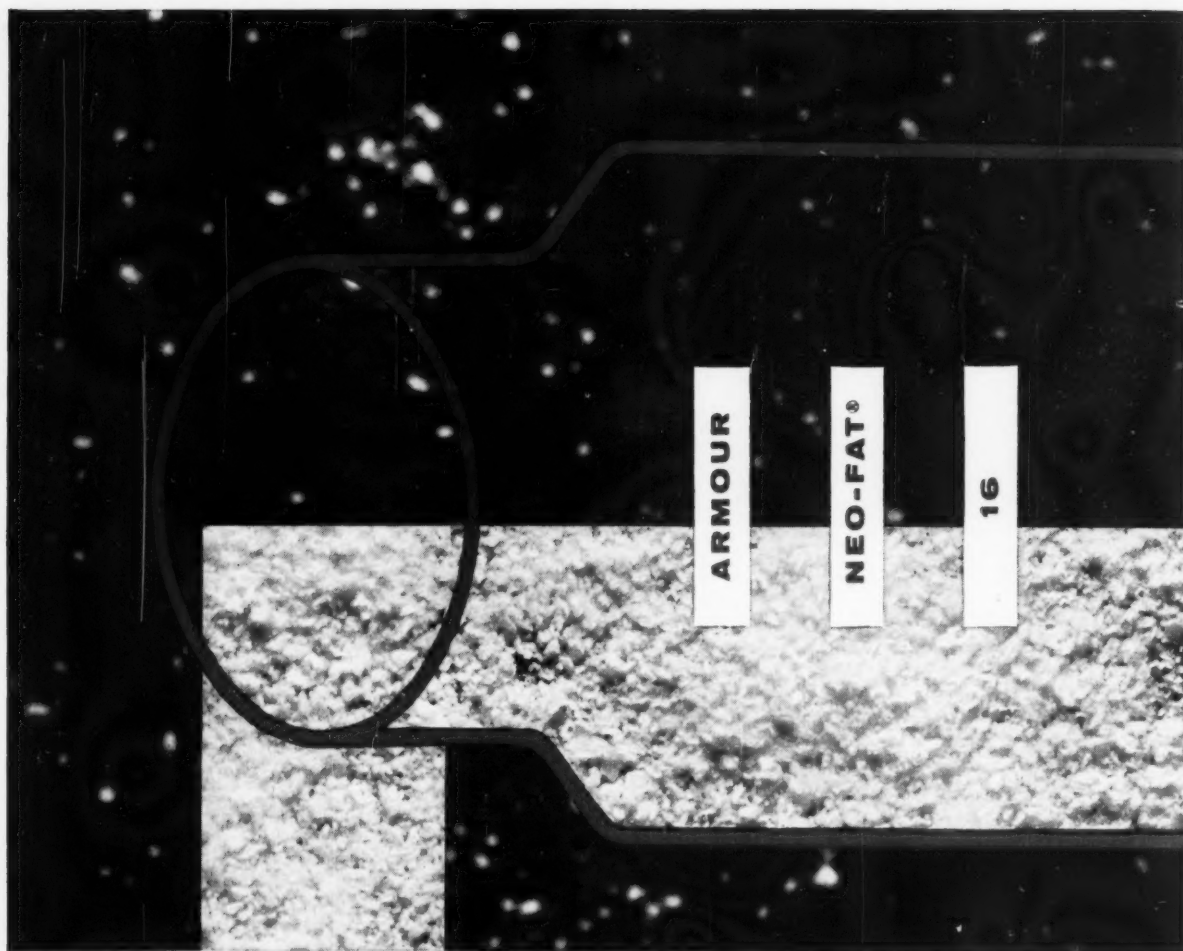
Swart in New Post

William E. Swart has been appointed manager of the Lubbock, Tex., branch of Thompson-Hayward Chemical Co., Kansas City, Mo., it was announced recently by Robert S. Thompson, president.

Prior to his recent appointment Mr. Swart has served as a salesman for the firm. He had covered western Kansas with headquarters in Wichita.

Stepan Products Data

Stepan Chemical Co., Chicago, recently published a six page folder giving description, uses, and advantages of its products. The list includes lauryl alcohol sulfates, amides, detergent specialties, formulated liquid detergents, nonionics, and dimethyl sulfoxide. Stepan's custom ethoxylating, blending and laboratory facilities are also briefly described.



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Purest Palmitic Acid ever offered Commercially

NEO-FAT 16

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Excellent Color Stability • Minimum Iodine Value

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SPECIFICATIONS	MIN.	MAX.	AVERAGE COMPOSITION	PERCENT
Titer °C.....	56	59	Myristic (C-14).....	1
Iodine Value.....	—	1	Palmitic (C-16).....	95
Acid Value.....	216	220	Stearic (C-18).....	Trace
Saponifiable Value..	216	221	Oleic (C-18).....	Trace
Unsaponifiable %...	—	0.3		
Moisture %.....	—	0.2	Animal or Vegetable Sources	
Color, 5 1/4" Lovibond	—	1.0R-5Y		
Heat Stability				
@ 200° C for 2 hrs..	—	2.0R-20Y	Available in flake or powdered form.	
			Shipped in tank car or carload lots.	

How do you order detergent chemicals...

from several sources
the hard, slow way?



from Monsanto in mixed truckloads
the quick, simple way?



Let's see what you ordered from Monsanto.
You've already saved time and
overhead costs—but that's only the start!

An actual mixed truckload



HOUSE ORDER

SHIPPER NO. 121653 BRANCH CINN DATE ENTERED 1-4-56 CUSTOMER'S ORDER NO. 9319

NET 30 DAYS

PPD ☒ COLL ☐ ROUTING ALGER C/O OK

DELIVERY P.O. TRENTON AS IND.

SHIPPED FROM TRENTON

WHSE CODE 17 BOOKED THRU 27-12

COPIES CODE 2-2

CUST. FORM CONTR.

SOLD TO

XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX

SHIP TO ABOVE

UNIT	DESCRIPTION	QUANTITY	PRICE
31 X 100# BAGS	MONO SODIUM PHOSPHATE ANHYDROUS	3100#	XXXXXX
35 X 100# BAGS	TRI SODIUM PHOSPHATE	3500#	XXXXXX
125 X 100# BAGS	SODIUM TRIPOLY PHOSPHATE	12500#	XXXXXX
45 X 200# DRUMS	SANTOMERSE NO. 1	9000#	XXXXXX
4 X 475# DRUMS	STEROX CD	1900#	XXXXXX

SHIP 2-16

CHECK R/R

SPECIAL INSTRUCTIONS

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**5 different chemicals — 3 sodium phosphates and
2 surface-active agents — 30,000 lbs. delivered promptly
to you in one truck — underway only a few hours after
Monsanto receives your order. AND LOOK AT THESE BENEFITS!**

YOU BUY ONLY WHAT YOU NEED. From Monsanto you buy only the chemicals in the amounts you need, not more than you need. As in the order at left, 1,900 lbs. of Sterox* — not a truckload; 9,000 lbs. of Santomerse* — not a truckload. Your money is not tied up in inventory.

YOU SAVE WAREHOUSE SPACE. Warehouse space costs plenty per cubic foot. Wouldn't you rather store *one* truckload of chemicals instead of four or five? When you purchase in mixed truckloads, Monsanto is actually doing your warehousing for you.

YOU SAVE DOLLARS ON PAPER WORK. On the average it costs a company \$4.50 to get out one purchase order. Some companies report that more orders than normal cost as much as \$13.00 each. A Monsanto mixed truckload order might eliminate three or four others — saving you more than \$25.00.

YOU SAVE ON FREIGHT RATES. A minor factor? Not when you total it up at the end of the year.

Every order you get from Monsanto is tailor-made to your requirements. You don't pay shipping costs on orders from several sources.

YOU PROTECT YOURSELF FROM COSTLY DELAYS. With one order instead of several, with one supplier — Monsanto — instead of several, you have cut down by many times the chances for clerical errors such as lost or mis-sent orders that can interrupt your production.

YOU GET FAST, PERFECTLY TIMED DELIVERY. Production moves smoothly because your flow of supplies is perfectly coordinated. Everything you need arrives together because it's all shipped from a single Monsanto storage point nearest you — usually in just a few hours after your order comes in.

ONE GROUP OF PEOPLE SERVES YOU. From the Monsanto representative who may help you choose a surfactant to the warehousemen who pack your mixed load securely, you are being served efficiently by a *single* coordinated team.

...BUT THAT'S NOT ALL!

*Reg. U. S. Pat. Off.



How do you order detergent chemicals...

from several sources

the hard, slow way?



from Monsanto in mixed truckloads

the quick, simple way?



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ANY OTHER SUPPLIER. CHECK AND SEE.**

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2. A COMPLETE LINE to choose from, including alkyl benzene, anionic and nonionic surface agents, and phosphates.	✓	
3. QUALITY CONTROL AT EVERY STEP —because Monsanto is basic—it controls manufacture from raw material to finished product.	✓	
4. TECHNICAL SERVICE —ready to serve you is a staff of widely experienced experts which the size of Monsanto and the completeness of its line demand.	✓	
5. IMPARTIAL ADVICE —Monsanto offers you unbiased advice because Monsanto makes products in every broad class used by detergent formulators—phosphates, anionics, nonionics, alkyl benzene and phosphoric acid.	✓	
6. RAPID DELIVERIES regardless of your location because Monsanto has full stocks in New Jersey, Massachusetts, Michigan, Illinois, Missouri, and California.	✓	
7. MIXED TRUCKLOAD SERVICE with its important economies and conveniences.	✓	



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New Sales Reps.

Monroe-Danford & Co., Lincoln Park, N. J., a new firm of manufacturers' sales representa-



D. Shaw



M. Smart

tives, was formed April 1 by Donald M. Shaw and Maxwell D. Smart, to supply packaging items to the cosmetic, drug, pharmaceutical and related industries.

The new firm will represent Metal Fabrications, Inc., Waterbury, Conn., manufacturer of closures, cases, flaconettes, eyelets and specialties; Seri-Print, Inc., Waterbury, Conn., silk screen decorators, and Federal Powder Puff Co., New York, manufacturer of puffs, sifters, carry-alls and pouches. The Monroe-Danford firm also offers its services on a consulting basis on packaging and production problems.

Gilbert New Becco Pres.

Frederick A. Gilbert succeeds Max E. Bretschger as president of Becco Chemical Division of Food Machinery and Chemical Corp., New York, it was announced recently by Paul L. Davies, FMC president. Dr. Bretschger has retired as division president and becomes senior technical advisor on peroxygen chemicals to the corporation.

When Charles A. Buerk founded Buffalo Electro-Chemical Co., Becco's predecessor, in 1925, he invited Dr. Bretschger to come to the United States from his native Switzerland to supervise the construction and manage the operation of the Buffalo plant. After Mr. Buerk's death Dr. Bretschger became president of the company. Before coming to the United States he served as production manager of one of the world's first electrolytic

hydrogen plants located in Switzerland.

Mr. Gilbert, Becco's new president, has been with the organization for the past 21 years. Having joined Becco as a control chemist he later became a research chemist and in 1942 was appointed assistant to the vice-president. In 1951 he supervised the start-up and operation of the division's new peroxygen chemical plant in Vancouver, Wash., and later was appointed vice-president and assistant division manager of Becco Chemical Division.

H. H. Guest Retires

Dr. Herbert H. Guest, director of research for the J. B. Williams Co., Glastonbury, Conn., recently retired after 44 years of service with the company. Dr. Guest is credited with overcoming spoilage created by foil wrappers, with devising a workable method for mechanically drying soap and with preventing the corrosive action of shaving cream on collapsible tubes.

Seebach Moves

Edwin Seebach Co., New York essential oil firm, moved its offices last month to 601 West 26th Street, New York 1. The telephone number remains unchanged.

Westvaco Sales Changes

Westvaco Mineral Products Division of Food Machinery and Chemical Corp., New York, has made three changes in its sales personnel organization, it was announced recently by Donald C. Oskin, sales manager of Westvaco.

Thomas M. Craig has been advanced to assistant product manager for phosphates and will be headquartered in New York. James A. Wedin has been named sales representative for the Nebraska, Iowa, Kansas and Missouri territory and will have his office at the Westvaco plant in Lawrence, Kans. Ralph A. Skaar becomes sales representative for the Manhattan and Westchester territory in the New York district.

E. P. Nicholson Dies

Edwin P. Nicholson, 57, sales representative of Givaudan-Delawanna, Inc., Givaudan Flavors, Inc., and Sindar Corp., in the New York and New Jersey territory, died May 24, following an illness of five months. He recently celebrated his 25th anniversary with Givaudan and had been associated with the aromatic chemical, perfume and related industries since 1920. Mr. Nicholson is survived by his wife, three daughters and a grandchild.

Dr. Max E. Bretschger (right) international authority on peroxygen chemical technology and retiring president of FMC's Becco Chemical Division, Buffalo, welcomes Frederick A. Gilbert as new president of Becco, one of industry's largest producers of hydrogen peroxide and allied compounds.





HEXACHLOROPHENE-G-11[®]-and **HEXACHLOROPHENE LIQUID SOAP** **NOW U.S.P.**

We are pleased to announce that hexachlorophene and hexachlorophene liquid soap have been included in the fifteenth revision of the Pharmacopoeia of the United States.

As the discoverer and producer of hexachlorophene, we welcome this further recognition by the medical profession and the privilege of joining the U.S.P. list of best-known and most important medical aids.

Hexachlorophene liquid soap is the only anti-septic soap recognized by the U.S.P.

G-11[®] is Sindar's trade-mark for hexachlorophene.

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Xavier Givaudan in U. S.

Visits by active members of three generations of the Givaudan family were reported recently by



Xavier Givaudan

Givaudan-Delawanna, Inc., New York. After an interval of seven years Xavier Givaudan, now in his 90th year, visited his American associate in the company of his son Andre. Xavier Givaudan is chairman of the board of Givaudan Corp. and its associated companies: Givaudan-Delawanna, Inc., Sindar Corp., and Givaudan Flavors Inc. He is still active in the management of the organization, which he and his brother Leon founded in Geneva some 60 years ago.

Leon Givaudan, son of Andre, a representative of the third generation also paid a visit recently to the New York organization. He is co-director of Companhia Brasileira Givaudan.

New West End Plant

West End Chemical Co., Westend, Calif., recently announced that its new lime burning and processing plant will be on stream this summer. The new facilities include a 340 foot rotary kiln and hydrators of latest design.

Chemists' Club Elects

At the recent 57th annual meeting of the Chemists' Club, New York, Leo V. Steck, Shell Chemical Co., was elected president of the club. He succeeds Ira Vandewater of R. W. Greeff & Co. Other offi-

cers elected include: Foster Dee Snell, Foster D. Snell, Inc., resident vice-president; David H. Killeffer, Tuckahoe, N. Y., suburban vice-president; Leopold Eckler, Ansco Division of General Aniline & Film Corp., Binghamton, N. Y., non-resident vice-president; William Punton, Stauffer Chemical Co., junior vice-president; Lloyd Van Doren, secretary; and John Willis, treasurer. Trustees elected for the 1956-1959 term are: Ralph L. Ericsson, Sumner Chemical Co.; Robert Hulse, National Distillers Products Corp.; and Kenneth Klipstein, American Cyanamid Co. H. W. Hamilton, secretary of the Chemical Specialties Manufacturers Association, was elected to serve out as a trustee the unexpired term of Lawrence H. Flett. Mr. Flett resigned as a trustee when he moved to London, N. H., and thus ceased to be a resident member.

Ungerer Execs. in Europe

Kenneth G. Voorhees, president, and Ivon H. Budd, first vice-president of Ungerer Co., New York, were due to return from a trip to Europe early this month. They visited the offices of Ungerer-Vidal Charvet, Paris, and several of the firm's European sources and customers.

CIBS Golf Outing

CIBS (Cosmetic Industry Buyers & Suppliers Association) will hold a golf outing June 28, it was announced recently. The event will be at Brookville Country Club, Brookville, L. I. Luncheon will be a la carte and dinner will start at 7:30. Tickets for golf and dinner cost \$17.00, golf only \$6.00, dinner only \$11.00, and \$1.00 extra for tickets purchased at the door.

CIBS had its annual Ladies Day meeting at Toots Shor's restaurant on May 10 with Lee Ann Merriwether, Miss America of 1955, as principal speaker. The next meeting was to have been held June 14, also at Toots Shor with John Gilvey as guest speaker. Mr. Gilvey is promotional supervisor, soap division, Colgate-Palmolive Co., New York.

Shulton Names Carpenter

Frank N. Carpenter, Jr., has been elected a director of Shulton, Inc., New York, maker of toiletries



Frank N. Carpenter, Jr.

and fine chemicals, it was announced recently by George L. Schultz, president. Mr. Carpenter joined Shulton in 1939 as assistant to the president, and then became sales manager and, later general sales manager. He was appointed a vice-president in 1952. A former U.S. Army officer, he attended Williams College and is a graduate of the University of Virginia.

Carpenter Joins Alcolac

American Alcolac Corp., Baltimore, recently announced the appointment of Owen G. Carpenter, Jr., as sales representative for the New England states and Ohio. Mr. Carpenter formerly was assistant manager of the marketing department, Antara Chemicals Division, General Aniline & Film Corp. He is a graduate of Syracuse University and has specialized in the marketing of surfactants for the past nine years.

Barnett to Rexall

James A. Barnett, former vice-president and director of Lever Brothers Co., New York, has joined Rexall Drug Co. as a vice-president, it was announced last month by Justin Dart, Rexall president. Mr. Barnett is located at the drug company's Los Angeles office.

O
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GEIGY
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GEIGY
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*Tinopal is Geigy's Trademark for Optical Brighteners

TINOPAL RBS *All-purpose brightener for heavy duty or fine fabric detergents and soap powders. Effective on cotton, nylon and other fibres. Not destroyed by bleach in the wash.*

TINOPAL 4BM *for laundry soaps and detergents where high fluorescence value on cotton is required.*

TINOPAL GS *for whitening toilet soap.*

TINOPAL 2B *for laundry soaps.*

TINOPAL ABN *A cationic brightening agent for use with fabric softeners, quaternary germicides.*

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New Colgate Directors

Election of two new directors was announced recently by Colgate-Palmolive Co., New York.



Ralph A. Hart

New members of the board are Ralph A. Hart and Robert E. Hilbrant. All other directors were re-elected at Colgate's recently held stockholders meeting.

Mr. Hart joined the Colgate organization in 1932. He has served as managing director of subsidiaries in India and Australia and as

vice-president of Colgate-Palmolive International, Inc. In 1955 Mr. Hart became a vice-president of the parent company and president of



Robert E. Hilbrant

Colgate-Palmolive International.

Mr. Hilbrant became associated with Colgate in 1924 and served in many different capacities in the toilet articles department before he was appointed its manager. He was named a vice-president of Colgate-Palmolive Company in 1954.

Bush to MM&R

Magnus, Mabee & Reynard, Inc., New York, recently announced the appointment of Harold E. Bush as manager, candy industry sales. The appointment became effective May 1.

Haley in New Post

E. Wayne Haley has been appointed assistant to the president of Columbia-Southern Chemical Corp., Pittsburgh, Pa., it was announced last month by E. T. Asplundh, president. Mr. Haley has also been elected a vice-president and director of Pittsburgh Plate Glass Export Corp. Both companies are subsidiaries of Pittsburgh Plate Glass Co., Pittsburgh, Pa. Mr. Haley has been associated with Columbia-Southern in an executive sales capacity since 1934, most recently as assistant to the vice-president. In his new position he makes his headquarters in New York and

will have charge of the exportation of chemicals through either Columbia-Southern or PPG Export as well as handle other special assignments.

Basch Oakite V.-P.

J. Justin Basch has been elected a vice-president of Oakite Products, Inc., New York, it was announced last month. Since 1953 Mr. Basch has been manager of Oakite's research and product development. He will continue to be in charge of these activities.

Cohen Glyco Sales Manager

Glyco Products Co., New York, recently announced the advancement of Samuel Cohen to the post of sales manager. With Glyco for the past 12 years, Mr. Cohen has served in the research laboratory, in production and in sales. He holds an M. A. degree from New York University.

Soap Ass'n Proceedings

The Association of American Soap and Glycerine Producers, Inc., New York, published last month the proceedings of its 29th annual convention, held Jan. 25-27 at the Waldorf-Astoria Hotel, New York. Free copies of the 123-page paper-bound book go to all member companies who attended the meeting. Price for members who did not attend or who wish extra copies is \$5.00, to non-members \$10.00 each.

Armour Shuts N. J. Plant

Armour & Co., Chicago, will discontinue the manufacture of soap and its glycerine by-product at its plant in North Bergen, N.J., it was announced last month. Soap making operations will stop July 21. Other activities at the North Bergen plant will continue.

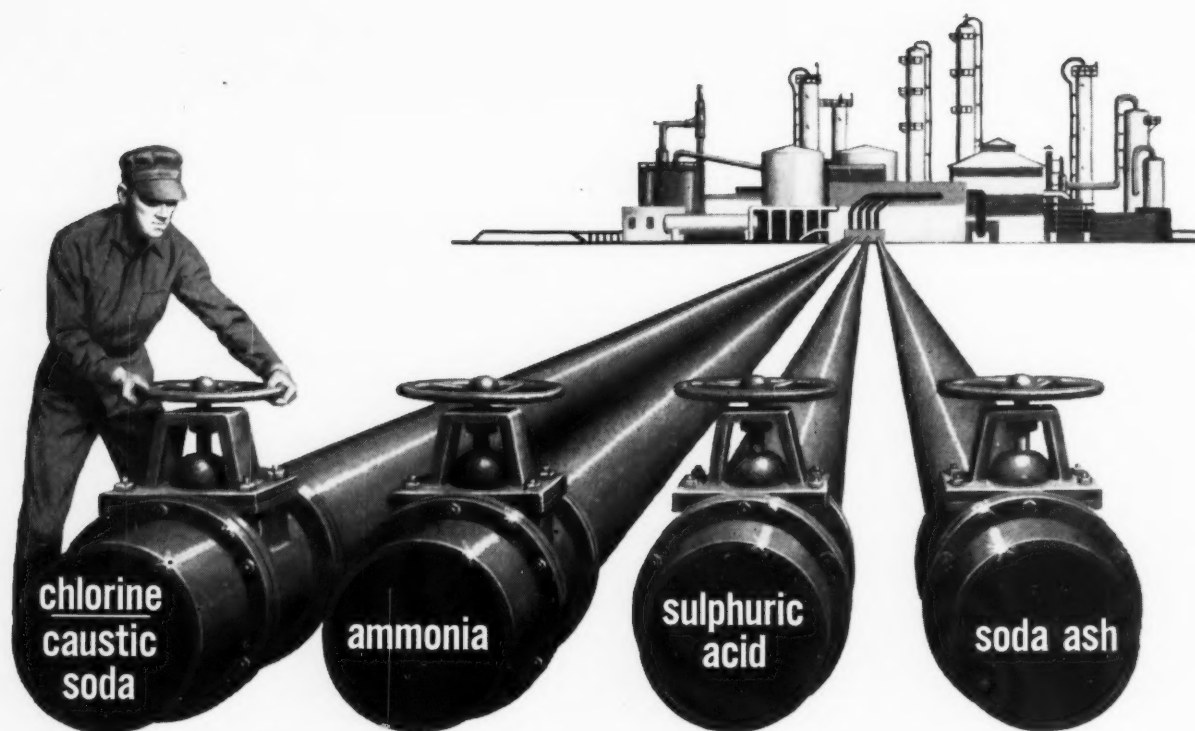
The New Jersey soap facilities were antiquated, Armour said, and no longer efficient enough for maximum profit from this type of operation. The firm's soap and glycerine production at other plants will not be affected by this move.

Malmstrom Service Lab

N. I. Malmstrom & Co., Brooklyn, N. Y., has established a products application laboratory to service the cosmetic and allied industries, it was announced recently by Richard Malmstrom, director of sales. Irving Colbert has been appointed to head the new laboratory. He holds an M. Sc. degree from Columbia University.

N. Y. Cos. Chemists

The New York Chapter of the Society of Cosmetic Chemists recently held its Ladies Night meeting at the Brasserie Restaurant. Guest speaker was Ernest Guenther, Fritzsche Brothers, Inc., New York, who spoke on the production of essential oils in various parts of the world. Dr. Guenther's talk was accompanied by slides and motion pictures which he took in the course of his world wide travels. The chapter will hold its next meeting Sept. 26.



you can be on our "pipe line"

Want to smooth out your chemical supply problems? Tap into the Olin Mathieson "pipe lines." You'll see what our multi-plant production facilities can mean to you.

The effect of a number of producing points is to balance out local shortages and surpluses. In one instance, a serious chlorine shortage on the Gulf of Mexico was relieved by an excess in Canada. Each of the five plants between shipped into the next plant supply area to the South, setting up a chain reaction which released the needed tonnage on the Gulf.

Our combination of multi-plant facilities and an imaginative approach to the logistics of the chemical industry can prove invaluable to you. Discuss it now with an Olin Mathieson representative or write the Chemicals Executive Office in Baltimore.



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New Petrochemicals Syndet

Petrochemicals Co., Long Beach, Calif., recently introduced "Petro AA" a new low sudsing detergent base in powder form, 98 percent active material, also available as a 50 percent liquid. Petrochemicals suggests the product for formulation of detergents intended for domestic and laundry washing machines. "Petro AA" is said to be non-hygroscopic, of light color, and compatible with alkali, phosphates and silicates.

The product is soluble and stable in liquid caustic (up to 20 percent caustic), and is suggested as an additive to caustic soda solutions for heavy duty cleaning operations. The physical action of "Petro AA" reduces the surface tension of the caustic liquor by 60 percent or more with consequent improvement in wetting and suspending power and rinsability.

Suggested formulations and use concentrations are given in detail on a number of leaflets available from the manufacturer at 420 Lexington Avenue, New York 17, and 1825 East Spring Street, Long Beach, Calif.

"Petro AA" powder, 98 percent, costs 33 cents per pound if ordered per drum, less when ordered in larger quantities.

Dr. Herman Pines, right, of Northwestern University, accepts Fritzsche Gold Medal Award and \$1,000 cash from Russell E. Bull of Fritzsche Brothers, Inc., New York, at recent Dallas meeting of American Chemical Society, sponsor of the international award. Dr. Pines won honor for his contributions to terpene chemistry.



Miss Lee Ann Merriwether, Miss America of 1955, guest speaker at the annual May ladies day luncheon of CIBS in New York is surrounded, left to right, by Al Mossheim, Tre Jur, program chairman; George Kaempkes, 1st vice-president; David J. Warner, Fleuroma, Inc., president, and William Jaeger, Park & Tilford, 2nd vice-president of CIBS.

Glycerine Awards Open

The Glycerine Producers' Association recently announced that the fifth annual Glycerine Research Awards are now open and that nominations for the 1956 awards will be accepted until Nov. 1. First award is \$1,000 and an honor plaque, second award is \$300 and the third award is \$200. They are granted for independent research leading to new and improved applications of glycerine or glycerine derivatives to products or processes. Copies of a bulletin giving complete details of the awards may be obtained on request to Glycerine Producers' Association, 295 Madison Ave., New York 17.

New ADM Sales Office

Archer-Daniels-Midland Co., Minneapolis, recently moved its New York sales offices to suite 1600 of the Transportation Building at 225 Broadway. The new location will also serve as headquarters for the International Division of the firm.

Yardley Expands in Canada

Yardley of London (Canada) Ltd. is building an addition to its Toronto plant, which will increase floor space by 17,500 square feet. Raw materials storage, fin-

ished products warehousing, and packaging facilities will be increased. The plant was erected in 1953.

Pantaleoni Sets up Firm

Raoul Pantaleoni, formerly of Van Ameringen-Haebler, Inc., New York, announced last month the establishment of Alpine Aromatics, Inc., Metuchen, N.J. The new firm specializes in odorants for industrial use.

Rice Morehouse-Cowles Rep

John K. Rice Co., Los Angeles, was appointed recently to represent Morehouse Mills and Cowles Dissolvers for the State of Colorado, in addition to the territory they already cover. The appointment was announced recently by George E. Missbach, sales manager of Morehouse-Cowles, Inc., Los Angeles.

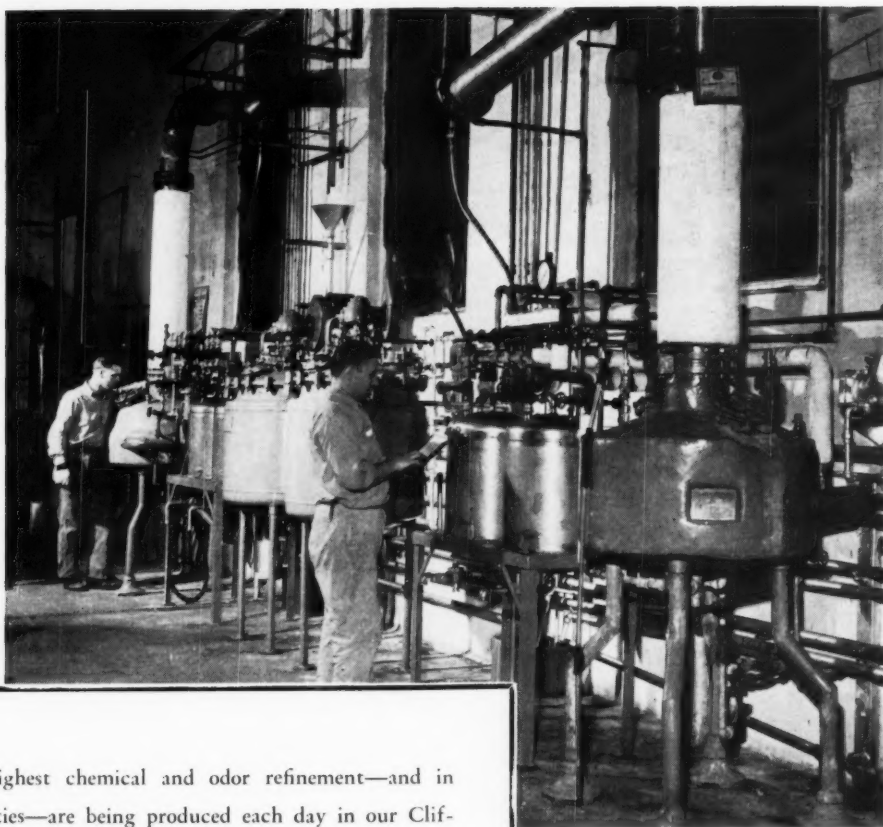
As the Reader Sees It

(From Page 39)

his study, when published in full, will help the industry toward that end.

Willis J. Beach
Sugar Beet Products Co.
Saginaw, Mich.

VACUUM FRACTIONATION UNITS
FOR THE PRODUCTION OF ARO-
MATICS USED IN PERFUMING.



AROMATICS of highest chemical and odor refinement—and in ever increasing quantities—are being produced each day in our Clifton Factory. New techniques and processes are constantly being explored with the hope that these may eventually result in the production of aromatics of even better quality than the fine materials we are already able to supply. Specific items of which we are justly proud include our incomparable LINALOOL, a beautiful, soft, sweet aromatic widely employed in floral compositions—lily, lilac, jasmine, neroli, rose, lavender and others; STYROLYL ACETATE, a powerful synthetic, used sparingly as a floral modifier, especially in gardenia and lily of the valley perfumes; RHODINOL, with its softly delicate, yet deep, warm note so valued in rose compositions and in floral and fancy bouquets; and CITRAL, without a chemical peer, its clean, fresh top note lending lift and superb good taste to every composition in which it is employed. If you want superior aromatics, try these outstanding products of our Clifton Factory. We challenge comparison!

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Brothers, Inc.

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BRANCH OFFICES and *STOCKS: Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, Montreal and *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.

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ODORANTS and DEODORANTS
for INDUSTRIAL and
TECHNICAL USE

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MADE-TO-ORDER FRAGRANCES
for PERFUMES, TOILETRIES
and COSMETICS

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AROMATIC CHEMICALS,
BASIC PERFUME and
FLAVOR RAW MATERIALS

Colgate to Aid 1956 Olympic Games

COLGATE-Palmolive Co., New York, will help defray the cost of sending American athletes to the Olympic Games in Melbourne, Australia. Colgate will give 10 cents in cash to the Olympic Committee for each of the first 1,000,000 box tops and wrappers collected from 12 specified soaps, detergents, and toiletries before July 15. The campaign was launched at a luncheon held April 30 at the "21" Club, New York, which was attended by His Excellency the Australian Ambassador to the United States, The Honorable Sir Percy C. Spender, K.B.E., Q.C.; by the following Colgate executives: E. H. Little, chairman of the board; W. L. Sims, II., president; Stuart Sherman and Robert E. Hilbrant, vice-presidents; Frank W. Reif, general manager of soap sales; and John N. Gilvey, promotion supervisor; and by officers of the U. S. Olympic Committee: Asa S. Bushnell, secretary; J. Lyman Bingham, executive director; Colonel Edward P. F. Eagan, chairman of the national fund raising committee; and R. Max Ritter, treasurer. Present also at the event were other officials of the Olympic Com-

mittee and Amateur Athletic Union as well as a number of outstanding amateur athletes.

To help build interest in the promotion Colgate has announced an Olympic contest offering four first prizes of four round-trips for two to the Games in Melbourne with all expenses paid. Contestants simply complete this sentence: "I think every American should support the United States Olympic Team because . . ." Entries must be accompanied by a proof of purchase of one of the Colgate products. More than 500 other prizes are offered.

The 12 products covered by the promotion and proofs of purchase required are: "Palmolive" and "Cashmere Bouquet" soaps (three wrappers), "Fab," "Ad" and "Vel" (one box top), "Colgate Dental Cream," "Palmolive" shave cream, "Veto" cream deodorant and "Halo" shampoo (both carton end-flaps), "Cashmere Bouquet" talc and "Palmolive Rapid-Shave" (sales slip) and "Ajax" (part of label).

A large variety of store display material is available to all re-

E. H. Little, standing, board chairman of Colgate-Palmolive Co., tells luncheon guests details of Colgate's national box-top promotion which will raise \$100,000 for the U. S. Olympic Committee. Shown, left to right, are Daniel J. Ferris, secretary-treasurer, National AAU; R. E. Hilbrant, vice-president of Colgate; Mr. Little; Sir Percy Spender, Australian Ambassador to the U. S., and W. L. Sims, II., president of Colgate.



tailers to highlight the partiotic nature of the campaign. In addition Colgate is conducting an advertising campaign in color and black and white in national magazines, scholastic publications, and other periodicals. Announcements on all Colgate-Palmolive television programs are supporting the promotion.

Rhodia Names Klenzade

Rhodia, Inc., New York, last month announced the appointment of Klenzade Products Co., Beloit, Wis., as sales and service representatives for its line of "Alamask" industrial deodorants. Klenzade will cover the central states. The Wisconsin firm specializes in pollution control chemicals for many industrial operations.

McElroy Speaks at M.I.T.

Neil H. McElroy, president of Procter & Gamble Co., Cincinnati, delivered the principal address at the graduation exercises of the class of 1956 at the Massachusetts Institute of Technology, June 8. Mr. McElroy, 1955 chairman of the White House Conference on Education, is a graduate of Harvard College.

New Armour Sulfonics

Two sulfonic acids derived from palmitic and stearic acids are available in pilot plant quantities from the chemical division of Armour and Co., Chicago, it was announced last month. Alpha sulfo-stearic and alpha sulfo-palmitic acids contain a strongly ionized sulfonic acid grouping and one carboxyl group. This makes possible a wide range of normal and mixed derivatives such as alkali salts, amides, esters and alkyl ammonium salts. Applications in detergents, ore flotation, greases, and other products are seen for these products or their derivatives.

A bulletin entitled "Alpha Sulfo Alkyl Acids" covers physical and chemical properties and is available together with samples from the chemical division's market development department.

INTERNATIONAL'S

Niagara Falls Plant
has been producing

CAUSTIC POTASH

for the
industrial chemical market
since 1918



FOR ALL INDUSTRIAL USES

LIQUID—Iron free, a clear water-white solution of 45-50%. In tank cars and in returnable and non-returnable 675 lb. drums.

LIQUID—Special low chloride, iron-free grade—45-50%. In tank cars and in returnable and non-returnable 675 lb. drums.

SOLID—90%. In 700 lb. drums.

FLAKE—90%. In 100, 200, and 400 lb. drums.

GRANULAR (BROKEN)—90%. In 100, 210, and 425 lb. drums.

AMERICAN SELECTED WALNUT—In 100, 210, and 425 lb. drums.

Liquid CAUSTIC POTASH

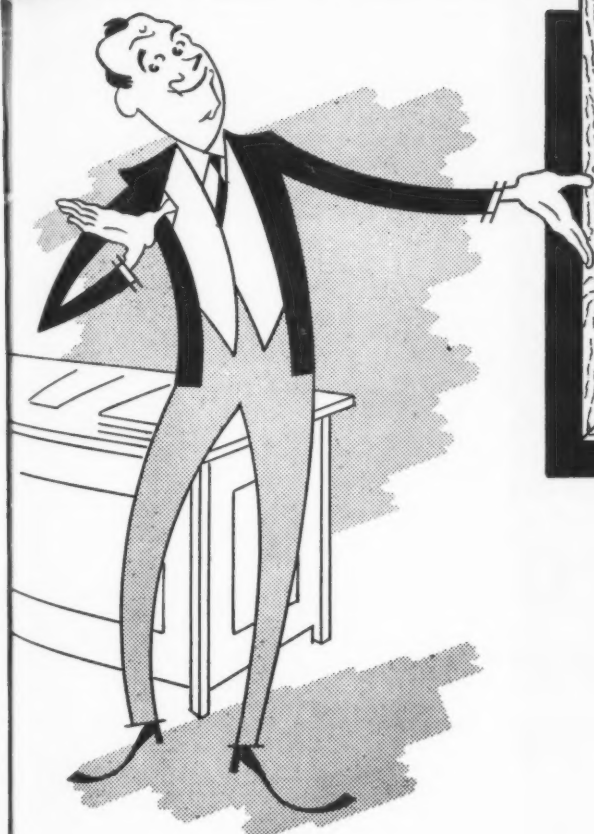
MINING REFINING • MANUFACTURING

CAUSTIC POTASH
all standard grades
CARBONATE OF POTASH
all standard grades
POTASSIUM CHLORIDE
all standard grades
SULFATE OF POTASH
MURIATIC ACID
LIQUID CHLORINE
MAGNESIUM OXIDE
HYDROFLUOSILICIC ACID

There's good reason for you to have confidence in *International* as your source of supply of *Caustic Potash*. For 38 years, International's Niagara Falls plant has been producing *Caustic Potash* with a consistent record of uniformity, quality, and good service. You'll get prompt deliveries and helpful cooperation when you depend on *International* for *Caustic Potash* in the form you require—Liquid, Solid, Flake, Granular, or American Selected Walnut.

**POTASH DIVISION
INTERNATIONAL MINERALS & CHEMICAL CORPORATION**

GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO 6
61 Broadway, New York 6 • Midland, Texas



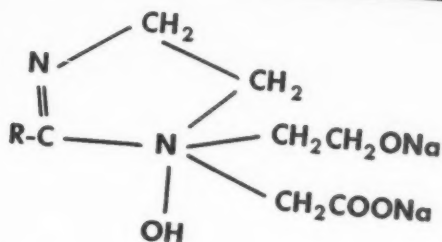
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"M" SERIES*

OF AMPHOTERIC SURFACTANTS

FOR EVERY PURPOSE

MIRANOL



R IS THE FATTY ACID DERIVATIVE RADICAL

MIRANOL HM CONC.

Lauric Derivative

General purpose detergent and wetting agent. Upgrading of detergent and soap formulations.

MIRANOL CM CONC.

Coconut Derivative

Clear product for dishwashing, floor cleaners, wax removers, industrial cleaners, steam jenny cleaners and bubble bath.

MIRANOL SM CONC.

Capric Derivative

Clear product, low wetting qualities for shampoos, medicated shampoos, rug and fabric shampoos.

MIRANOL MM CONC.

Myristic Derivative

High temperature detergent, good foamer, shampoo lubricant, lubricant for metal drawing, cutting oils.

MIRANOL DM

Stearic Derivative

Low priced snow white paste. Hair rinse. Textile softener, can be used as an anionic or cationic product. Will not yellow with heat application.

Our Research Department will answer your Questions or Detergent Problems.

This is a series of revolutionary surface active agents of a basically new and different structure with amazing properties and versatility.

NOTE THESE ADVANTAGES:

Combined in a single economical product

- MORE FOAM, GREATER STABILITY
- WIDER VERSATILITY THAN ANY OTHER SYNTHETIC DETERGENT TYPE AVAILABLE TODAY
- COMPATIBLE WITH ANIONIC, CATIONIC AND NON-IONIC AGENTS
- NO SKIN OR EYE IRRITATION
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- LIQUID PRODUCTS CAN BE FORMULATED CONTAINING UP TO 20% ALKALI OR ELECTROLYTES
- COMPLETE FOAM COMPATIBILITY WITH SOAP
- FORMULATIONS AVAILABLE FOR PRODUCTS TO BE PACKED IN STEEL OR TIN CONTAINERS REQUIRING NO LINING

Send for Miranol Samples Today!

*U. S. Patent No. 2,528,378

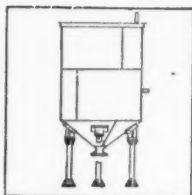
THE MIRANOL CHEMICAL COMPANY

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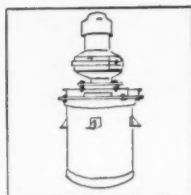
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Tel: ESsex 4-2500

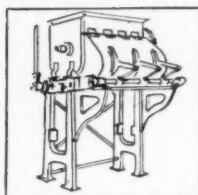
Manufacturers of Synthetic Organic Detergents for all industries



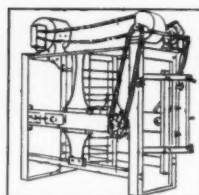
KETTLES



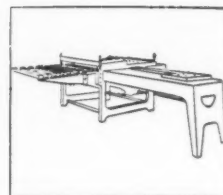
CRUTCHERS



AMALGAMATORS



SLABBERS



LAUNDRY SOAP CUTTERS

No Operator Injuries Reported
in Seven Years by Users of the

HOUCHIN SAFETY AIR PRESS

Houchin is exclusive manufacturer in United States under U. S. A. Patent License.

Although there are a great many of these safety air presses in use today not a single accident to an operator has been reported in the seven years these presses have been on the market.

The air ram remains locked at all times, until the operator has moved both hands away from the die box to depress the right and left hand valve release controls *simultaneously*.

PRESSING IS QUICK, POSITIVE AND UNIFORM

Dangerous, old fashioned, tiring foot lever controls are eliminated. The operator remains comfortably seated. The actual pressing and ejection operations, although manually controlled, are completely automatic.

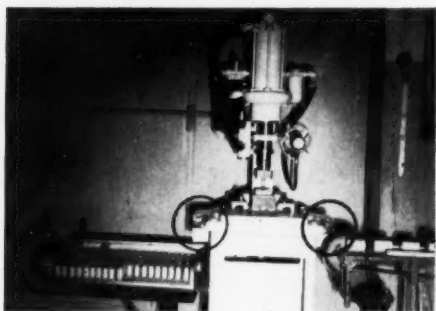
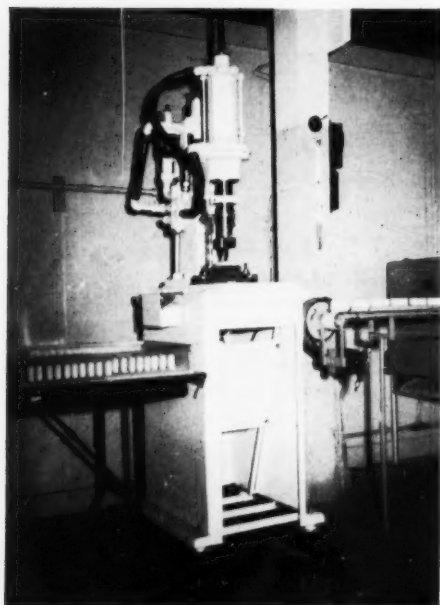
HOURLY AND DAILY PRODUCTION IS GREATER.

Operators soon learn the simple, safe, fast routine of feeding blanks to either Box or Pin Dies.

FATIGUE IS ELIMINATED. Efficiency, speed and safety of production consequently gain.

SURFACE PRESSURES up to 2500 lbs. are attained by a simple thumb and finger valve adjustment. Either single or multiple air ram strokes are made at will by the operator.

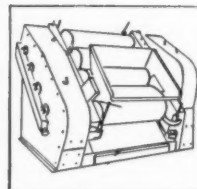
This air controlled press may be used for "cutting die" operations, such as gasket making, swatches or punching.



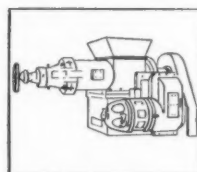
NEW IMPROVED MODEL B

Note safety automatic hand levers on each side of the press, away from the die position. Both hands must be used to depress right and left hand control levers *simultaneously*, in order that the air ram may function.

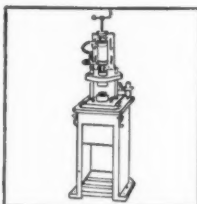
HOUCHIN builds all the kindred machinery needed for completely automatic, continuous or intermittent, soap production.



MILLS



PLODDERS



PRESSES

and many other machines — including Laundry Soap Frames and Automatic Toilet Soap Cutters.

HOUCHIN MACHINERY CO., INC.

HAWTHORNE, NEW JERSEY, U. S. A.

Manufacturers of Soap Making Machinery for Over a Century

Centrifuges in Soap Making

USE of the centrifuge in soap production ensures purity of the final product and economy in time and labor. The purpose of centrifuging is the acceleration of the natural sedimentation rate of materials which are to be separated out. Operating on this principle the centrifuge removes impurities from fatty raw materials and separates the soap from the underlye, while cutting the time consumed by the natural settling out process.

Cleaning the Fat Charge

MOST neutral fat charges contain skin fragments, coagulated blood and proteins of animal and vegetable origin. Some of these impurities are present in such fine suspension that they are hardly visible. These particles are not removed in the coagulation process but remain in the soap, representing a danger to color and odor properties of the final product. Analysis of the fatty ingredients and of the soap may be satisfactory, the soap may be fully saponified, and still there may be odor and color deterioration. We can only assume that these tiny impurities undergo changes in the soap which cause these undesirable phenomena. The soaper can safeguard himself against such unexpected conditions only by centrifuging the fatty materials.

Fats, stored in tanks or containers and kept in a liquid state, precipitate a tough black slime after a short storage period. Frequently the precipitate contains a high ratio of pure material. A complicated process may be required to reclaim the sediment, and hard-to-break emulsions may be formed. This en-

tire problem is eliminated by the use of a centrifuge.

Even after the fat charge has undergone chemical purification centrifuging is justified. However, passage through a centrifuge may make chemical precleaning unnecessary. Cleaning methods involving boiling with saline solution, sulfuric acid, alum, etc., and heating the fatty material to 100-120°C. yield only partial results, leaving suspensions which only the centrifuge can break up. Oils cleaned with 60° sulfuric acid frequently remain dark in color owing to suspension of minute particles. In such cases centrifuging effects a 100 percent cure, an important fact in countries with a highly developed soft soap industry. Turbidity formed in fats cleaned with alkali is removed by centrifuging, which extracts the soap in concentrated form. Only then can the alkali cleaning process be considered truly complete.

The author knows several soap plants in various countries where all fatty materials, neutral fats and fatty acids, are passed through the centrifuge before and after bleaching, before splitting or, without special pretreatment, prior to saponification. This procedure is advocated as a safeguard against conditions which defy explanation.

A batch of tallow subjected to splitting in the autoclave may suddenly form a hard-to-break emulsion with metal soaps and

glycerine liquor, a complication directly attributable to insufficient pre-cleaning. Such an emulsion can be separated in the centrifuge. The small part of the emulsion which may be separated out can be added to the next batch in place of the cleaving agent.

The fatty acid and the glycerine lye can be obtained separately and in pure form immediately after the fat splitting operation has been completed. Particles of the splitting agent suspended in the fat are removed at the same time. Impurities precipitated in the cleaning of the glycerine lye and of the under lye are separated out 100 percent by the centrifuge and more rapidly and efficiently than by a filter press with its consumption of filter cloths and extra labor.

It should be repeated that the coagulation process does not rid the soap of all impurities present in the fat charge. Some of the impurities are sealed into the soap. Metal soaps dissolved in the fatty materials, of course, can not be separated out but must be removed by treatment with sulfuric acid which should be followed by centrifuging.

Sulfuric acid treatment should be applied to every fatty acid, which may contain iron compounds even when shipped in lined iron drums. The lining may be faulty and the plug is usually uncoated, which encourages the formation of iron soaps. Fatty acid has been known

Use of the centrifuge in soap making assures purity of the final product as well as economies in time and labor.



MECCANICHE MODERNE

CORSO SEMPIONE, 51

BUSTO ARSIZIO (ITALY)

CHARACTERISTICS OF THE "PISONI SAIX" PLANT

It is the only plant on the market which continuously cools soap with simultaneous extrusion of a continuous bar maintaining unchanged total fatty acids content as determined before cooling.

It comprises one special cooling plodder which, working without any endless screw, can extrude soaps made with fats having a high or low melting point even if containing high percentages of water or builders, namely:

- Pure soaps having 62-63% T.F.M.;
- Soaps having T.F.M. from 35% to 62-63%;
- Soaps having T.F.M. 62-63% with 25÷30% rosin;
- Soaps having 56% T.F.M. with 25-30% rosin, filled with silicate or soda carbonate;
- Mixing soaps having 100% coconut oil;
- Olive oil foots soaps;
- Pure peanut oil soaps.
- Soaps with Phenol;
- Dry, pure or filled, soaps having T.F.M. contents from 35 to 72-74%;
- Transparent laundry or toilet soaps having 72-74% T.F.M.

Savings: Steam, 100% — Labor, 70% — water, 50% — power, 50%.

A fully automatic and continuous operation — only one workman to run the plant—small space requirements—absolutely no scraps—automatic perfuming.

By our process foaming capacity is highly increased—cakes undergo no deformation during storage neither moisten package.

These plants are manufactured for the following output capacities: 0.5 — 1 — 2 — 3 tons per hour.

We also manufacture:

Complete plants for piled toilet soaps — chips — synthetic detergents in beads form.

Free and without any obligation, ask for tenders — references—catalogues—soap samples—plants inspection.

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Référence client: VR/AS

Le 11 MARS 1955

MECCANICHE MODERNE
BUSTO ARSIZIO Italie

Monsieur le Directeur,

Comme suite à votre demande, nous vous remettons la photographie de l'installation que vous nous avez livrée.

Votre installation SAIX fonctionne parfaitement depuis 5 mois et la production horaire dépasse le maximum que vous nous avez garanti.

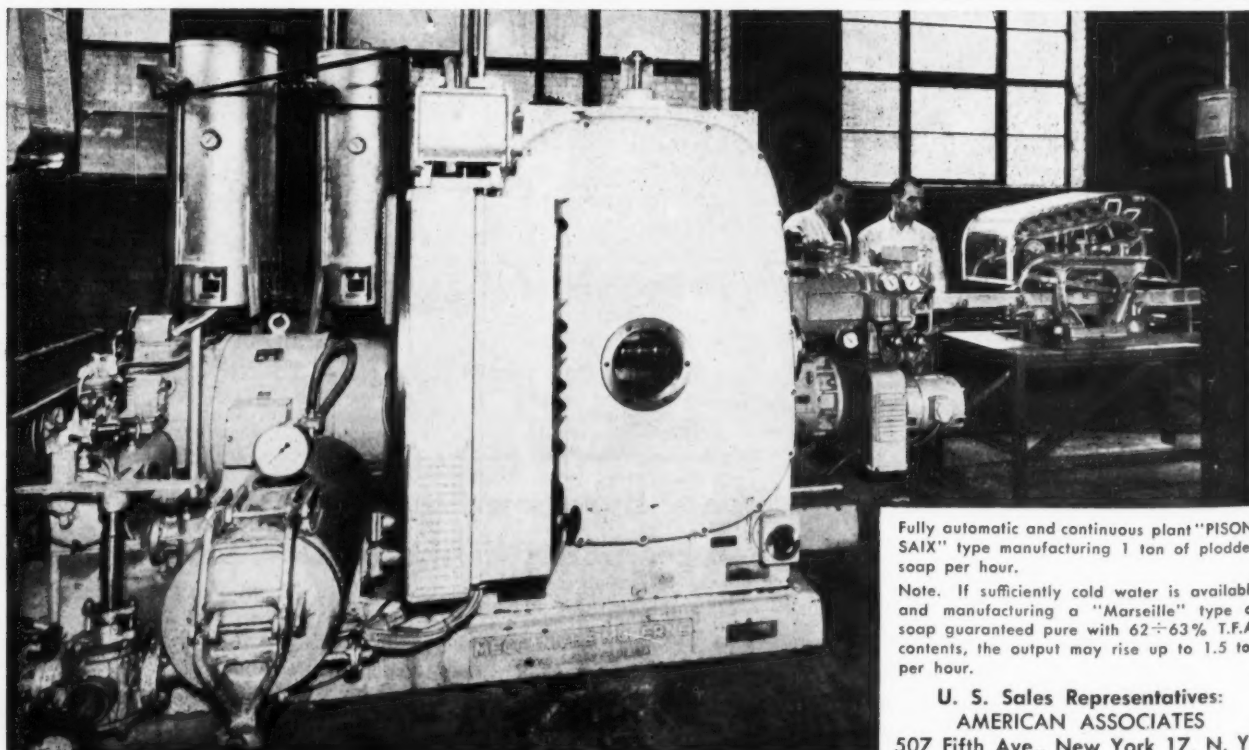
Nous utilisons de l'eau à la température variant de 15 à 20 ° selon la saison.

Nous produisons toujours le même type de savon pur 62 % d'acides gras et il sort de votre installation d'une façon parfaite.

Nous sommes à votre disposition pour faire visiter l'installation à vos clients éventuels dont vous voudrez toutefois nous faire connaître le nom à l'avance.

Nous vous prions d'agréer, Monsieur le Directeur, nos sincères salutations.

Directeur Général
Am. S. S. S.



Fully automatic and continuous plant "PISONI SAIX" type manufacturing 1 ton of plodded soap per hour.

Note. If sufficiently cold water is available and manufacturing a "Marseille" type of soap guaranteed pure with 62÷63% T.F.A. contents, the output may rise up to 1.5 ton per hour.

U. S. Sales Representatives:
AMERICAN ASSOCIATES
507 Fifth Ave., New York 17, N. Y.

to show discoloration up to a depth of 30 centimeters from the iron stopper. In storage or transport the drums are frequently placed so that the acid remains in permanent contact with the offending plug. If the drum contains a liquid, the entire contents will be contaminated in such a case.

Low price fatty materials incorporating a comparatively high ratio of impurities and water can be completely purified by one passage through the centrifuge. There are machines with three outlets capable of separating in a single operation slurry, water, and fat. Inorganic solutions can be cleaned by centrifuging immediately after dissolving and can be conveyed to the storage containers without use of pumps, the impetus being supplied by the centrifuge. Mobile centrifuges are available which can be used anywhere in the plant.

Making the Soap

MACHINES featuring exchangeable cylinders are capable of separating as well as emulsifying. Saponification of a neutral fat charge is speeded and facilitated by continuous addition of slightly more than stoichiometric amounts of alkali during centrifugation. As an alternative, the fat-lye emulsion flowing from the centrifuge may be left in the kettle for spontaneous heating and saponification, because such an emulsion is more stable than an emulsion made by a stirrer. Necessary corrections can be made once saponification is completed.

Immediately after salting out, and when the steam has been shut off, the centrifuge is attached to the underlye outlet where it acts as a separator of soap from underlye. The soap can be returned to the kettle but care must be taken not to mix the centrifuged soap with the untreated soap. This can be prevented by cutting down the flow of the feed and if coagulation has been correct the settling out of the underlye will soon empty a quarter of the kettle capacity. Subsequent testing for free alkali and

salt content will prove that separation of underlye from curd by this procedure is more complete than by simple settling out.

The same applies to centrifugal separation of soap paste from curd in partial coagulation. Immediately after completion of the procedure the centrifuge is connected and the paste separated from the curd. The separated curd is expelled into a conveyor or intermediate tank. The paste flows into a container where it can be broken into underlye and curd.

A completely homogeneous soap mass is yielded by centrifugation. Formation of an "interlayer" need not be feared and no differences in salt or alkali content of the soap will occur such as may appear after settling out in the kettle. The higher the rpm, the cleaner the separation. However, materials used in soapmaking have sufficiently different specific weights to dispense with units capable of 50,000 rpm and more, which are rather expensive.

Some soapers in Germany and abroad run centrifuges on a 24-hour basis. Very pure fat charges, pure saponification lye and a purer soap combined with economy in time and labor result from the adoption of the centrifuge by the soaper.

Various Centrifuges

SEDIMENTATION rate is increased 15,000 to 50,000 times by the "Cepa Rapid Centrifuge." Simple construction makes for ease of installation, easy maintenance, and long life of the unit. The machine reaches full speed within one minute, is capable of from 14,000 to 50,000 rpm, and can be brought to a standstill within a few minutes. The "Cepa" laboratory centrifuge also is built for plant scale operations. Capable of multiplying natural sedimentation rate by 50,000, this machine is designed for great versatility. Featured are three different and easily interchangeable cylinders which make the model adaptable to clarifying operations

(slurry and soil removal), separation (water from oil, soap from coagulation phases, separation of emulsions), and emulsification. Four additional types of cylinders are available which permit operations in fields of no immediate interest to the soap and chemical specialties industries.

The cylinder designed for emulsification can be used in soap making as an aid in saponification as described above. Furthermore, it will serve to make the necessary emulsions in the manufacture of waxes, polishes, cleaners, cosmetic emulsions and other products. Soap additives, including superfatting agents, CMC, and others can be emulsified prior to incorporation in the soap. This is more satisfactory than separate addition to the mass in the mixer. "Cepa" centrifuges are made by Carl Padberg G.m.b.H., Lahr, Schwarzwald, Germany.

Purification and clarification of liquids, reclamation of fatty materials and separation of liquids with concurrent cleaning, if desired, are performed by centrifuges made by Westfalia Separator A.G., Oelde, Westfalen, Germany. Of particular interest to the soap maker are the oil separators ("Type OK") for continuous separation of fat from water. A large slurry chamber in the drum capable of holding considerable amounts of solid impurities renders these machines particularly suitable for the precleaning of crude fats and oils. For the removal of an extra high percentage of impurities centrifuges can be used which eject the slurry without interruption of the process. This feature eliminates the unpleasant task of manually cleaning the drum. All separators by Westfalia can be supplied with a "gripping" device which acts as a pump and conveys fluids to all levels occurring in production practice.

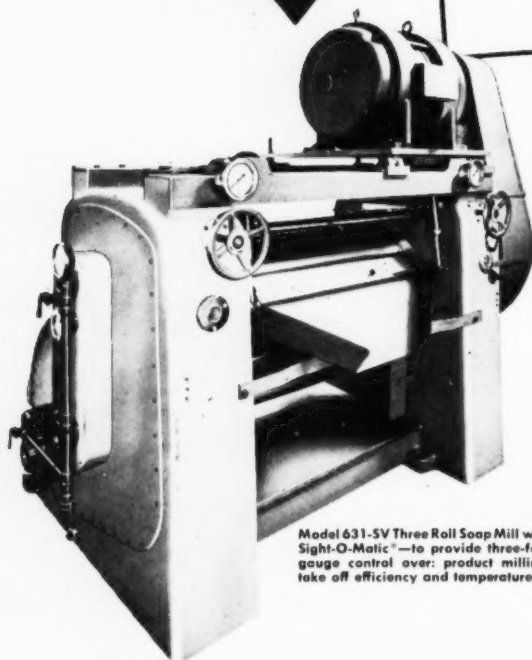
For oil processing plants connected with a soap plant the firm offers a model for the oil free and concentrated precipitation of the soapstock resulting from alkali refining. K. L. Weber, *Seifen-Oele-Fette-Wachse*, No. 9, 1956, pp 211-

LEHMANN MACHINES

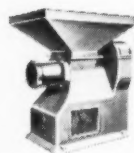
... Engineered to

YOUR

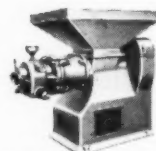
**Soap Finishing Needs
PRESENT and FUTURE**



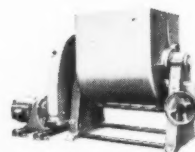
Model 631-SV Three Roll Soap Mill with Sight-O-Matic®—to provide three-fold gauge control over: product milling, take off efficiency and temperature.



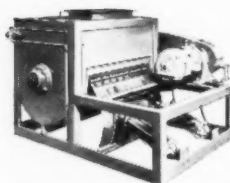
Model 310-P Preliminary Plodder



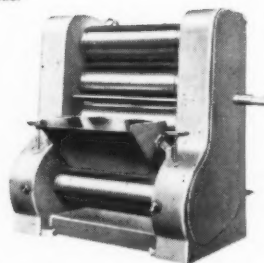
Model 310-F Finishing Plodder



Model 40 G-Y Tilting Type Amalgamator



Model 40 G-B Bottom Dump Amalgamator



Model 912-SA Five Roll Finishing Mill

LEHMANN is constantly aware of, and responsive to, the mechanical problems involved in processing soaps—to past standard formulations and the newer detergent types. We have designed machines to meet the changing needs of the Industry. Our engineers cooperate closely with soap producers to assure that user requirements are reflected in every detail of construction.

Whether you are looking to improve returns from present operations or gear your production to meet the demands of changing requirements, let Lehmann work with you toward a solution. Make use of Lehmann test facilities and engineering service on any of your processing machine problems . . . whether they involve new or old formulations.

Lehmann tailors special machinery to suit particular needs. Our standard models . . . some of which are shown . . . are only indicative of the type of equipment and service which Lehmann can supply.

If you are not ready for new equipment, ask us about Lehmann Certified Factory Reconditioning for the machines you are now using.

®Reg. U. S. Pat. Off.



J. M. LEHMANN COMPANY, Inc.

COAST-TO-COAST SERVICE

Moore Dry Deck Company
Oakland, California

Lammert & Mann Co.
Chicago 12, Illinois

J. M. Lehmann Co., Inc.
Lyndhurst, New Jersey

213. (Similar centrifuges are being built in the United States. Ed.)

New Books

Chemical Market Research

"Chemical Market Research in Practice" edited by Richard E. Chaddock of Hercules Powder Co., Wilmington, Del., Reinhold Publishing Corp., New York, 1956. Cloth, five by seven and one half inches, 196 pages, price \$3.00. This volume is based on a series of 16 lectures presented by the Chemical Market Research Association at Case Institute of Technology and University of Delaware. The presentation relating to the synthetic detergent industry was contributed by Lawrence Flett, consultant, National Aniline Division, Allied Chemical & Dye Corp., New York. Market research information concerning the petrochemical industry outlined by R. L. Bateman, Carbide & Carbon Chemicals Co., New York, reveals among many interesting facts: that detergents accounted for two percent and automotive and aviation specialties (antifreezes, antiknock compounds, etc. for 15 percent of petrochemical end uses in 1954. A chapter on effective utilization of the literature by Richard M. Lawrence of Wyandotte Chemicals Corp., Wyandotte, Mich., and Jonathan Sprague, Jr., Freeport Sulphur Co., New York, is an excellent signpost to anyone attempting to find his way through the maze of available factual information. S. D. Koonce, American Cyanamid Co., New York, on "How to do Effective Field Work" would make profitable reading not only for the market researcher but for anyone engaged in sales work or in the diplomatic service.

The book covers the subject of chemical market research from general as well as specialized angles, and includes a departmental case study covering a period of several decades.

Modern Chemical Processes

"Modern Chemical Processes," volume 4, by the Editors of *Industrial and Engineering Chemistry*, Reinhold Publishing Corp., New York, and Chapman & Hall, Ltd., London, 1956. Cloth bound, eight inches by 11¼ inches, 202 pages, price \$5.00. This is the fourth volume in a series which presents at two-yearly intervals recent developments in chemical processes.

The present volume contains 19 detailed and illustrated articles describing chemical manufacturing plants, each by a member of the IEC editorial staff in collaboration with a member of the industry presented. Included in the present selection are: "Specialty Soaps" by Kenneth M. Reese in collaboration with Ralf B. Trusler and Irene T. Bugas of Davies-Young Soap Co., Dayton, O.; "French Synthetic Detergents from Petroleum" by Gordon C. Inskeep in collaboration with Alex Mussard of Shell Saint-Gobain, Petit-Couronne, France; "Allethrin" by Howard J. Sanders in collaboration with Albert W. Taff of U. S. Industrial Chemicals Co., a Division of National Distillers Products Corp., Baltimore, Md.; and "Vegetable Oil Refining" by Kevin J. Bradley in collaboration with Fred H. Smith, Sharples Corp., Philadelphia. Each essay summarizes background information such as technical and commercial history and the origin of present installation; description of plant installation including design detail of non-standard equipment; description of process and operation of plants; economics of the process; personnel; and future prospects. Literature references are appended after each article, and an over-all index is included at the end of the volume.

D&O Perfume Data

"Fragrances for Polyethylene Packaged Cosmetics" is the title of a bulletin published recently by Dodge & Olcott, Inc., New York. Third in a series of perfume leaflets

this folder reports studies made by D&O on the permeation rate of its entire repertoire of perfume components and compositions, and resulting data concerning raw material weight loss and container deformation. A representative list of fragrances suitable for use in polyethylene packaged products is given.

Improved Cowles Dissolver

Development of an improved laboratory model of the "Cowles Dissolver" featuring a continuously variable range of speeds was announced last month by Morehouse-Cowles Inc., Los Angeles. Speeds on the new model are variable from 1900 rpm to 5900 rpm with impeller speeds of 1600 to 6150 rpm depending upon the size impeller used. Fast adjustment of impeller height, less vibration and greater ease of maintenance are claimed for the new dissolver. Information is available from Morehouse-Cowles, Inc., 1150 San Fernando Road, Los Angeles.

Polyethylene Tanks

A new line of polyethylene tanks, equipped with draining faucets, was introduced recently as off the shelf items by American Agile Corp., Maple Heights, O. Designed for storing and mixing cleaning solutions and other corrosive media they are said to have an exceptional service life. The tanks come in a variety of sizes and capacities ranging from three to 14 gallons. Additional information is available from American Agile at P.O. Box 168, Bedford, O.

New Potdevin Folder

Potdevin Machine Co., Teterboro, N. J., recently published an illustrated two color folder describing "Release-Cote", a new releasing agent said to prevent coatings such as glue, plastics, inks, paints, etc. from adhering to any exposed surface. The product is fire-safe and does not mix with the coating material, the manufacturer claims. The releasing agent can be used to prevent coating materials from sticking to operators hands.

Continuous Soap Plants



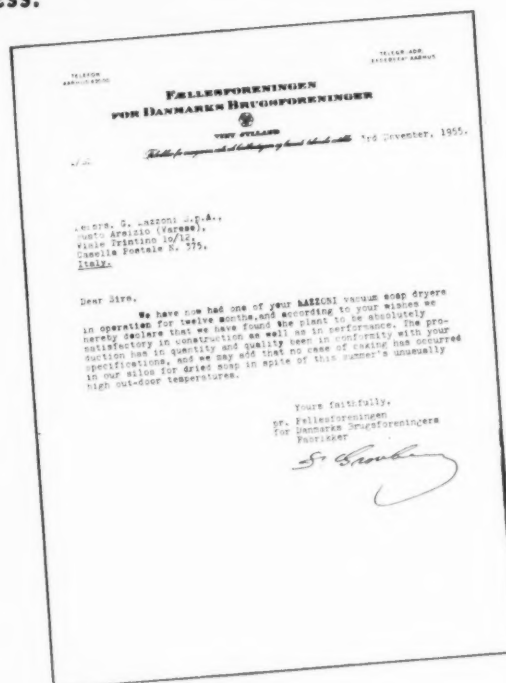
Photograph of a MAZZONI soap plant automatically producing one ton of household or toilet soap per hour. "S" is the silo for the storage of the dried soap rods. From the silo the rods are then passed through a line of finishing machinery for milled toilet soap cakes.

★ The Vacuum Process, over all other old and new cooling methods, enables you to make use of the water at the temperature available at any factory as it is possible to cool the soap at such a temperature because of the vacuum and the peculiar devices provided—without resorting to expensive cooling equipment—so that its consistency is satisfactory no matter what the cooling water temperature is.

★ Our manufacturing range also includes: plants for continuously sulphonating and spray-drying synthetic detergents in the form of hollow beads—continuous fat splitting and fatty acid distilling plants—continuous fatty acid saponification plants—continuous glycerine recovery and refining plants.

Advantages of the MAZZONI Process:

- ★ Small plant space; only one operator needed.
- ★ Saves 70% in steam, 50% labor, 40% electric power.
- ★ Operates at low temperature, avoiding deterioration of soap.
- ★ Vacuum process gives better toilet soaps. Deodorizing effect reduces perfume needs. Smoother, grit-free cakes which wash off evenly. Improved lathering.
- ★ Transparent toilet and laundry soaps without addition of glycerine, alcohol, sugar, and any other additives.
- ★ Complete installations (mixers, mills, plodders, cutters and stampers) for milled toilet soap and soap flakes.
- ★ Since 1945 more than 130 plants have been installed in different countries of the world.
- ★ Laundry soaps, pure from 62% fatty acids upwards or filled from 35 to 62% fatty acids, ready for pressing and immediate packing without slabbing, cutting, etc. Automatic perfuming device included.
- ★ Suitable for adaptation in any soap factory, — a compact, low-cost vacuum process, continuous from neat soap to pressing and wrapping.
- ★ Soaps showing a beta phase content from a minimum of 75 percent to a maximum of 100 percent. Analyzed in the laboratories of Procter & Gamble Company, Cincinnati. Analysis is given with their permission.
- ★ Plants for outputs of one-quarter-ton, half-ton, one ton, two tons, three tons or higher per hour.



For further detailed information, write to

G. MAZZONI, S. p. A.
Busto Arsizio, (Varese) Italy

Cable address: Cosmazzoni, Busto Arsizio



New high speed automatic twin-piston filling machine adaptable to special and standard containers was announced recently by F. L. Burt Co., San Francisco.

Burt Twin Piston Filler

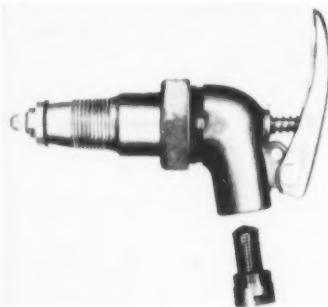
A high speed automatic twin-piston filling machine adaptable to special and standard containers was introduced recently by F. L. Burt Co., San Francisco, Calif. Designed to fill liquids and most solids, the unit can be adapted to various containers by means of a rising table. Featuring acid resistant stainless steel contact parts the filler is capable of depositing four-ounce to quart quantities and of filling 40 to 60 containers per minute.

— ★ —

Safety Drum Faucet

An improved drum faucet designed for safe control of flammable liquids was introduced recently by Protectoseal Co., Chicago. The faucet can be used with any type container having a $\frac{3}{4}$ inch bung opening. A swivel head per-

Improved drum faucet of Protectoseal Co. for handling flammable liquids.



mits the faucet to be screwed into the bung opening. When a firm threaded connection is secured the pouring spout is swivelled to the correct position for use and tightened with a knurled locking nut. The tightened nut compresses a "Teflon"-asbestos packing which prevents leakage at the swivel connection. The self-positioning design also eliminates damage to threads by forcing the faucet into correct position for dispensing and does away with the cause of leakage at this point.

A spring-mounted handle permits flow of liquid only in the presence of pressure and eliminates the possibility of unattended flow. Hand pressure also compresses a spring actuated bushing against a packing compound in the plunger rod to prevent leakage at this point.

A cylindrical perforated brass flame arrester which also serves as a strainer is located within the faucet at the dispensing opening and can be removed for cleaning or replacement without unscrewing the faucet. The flame arrester bars exterior fire from the contents of the container. Body of the faucet is made of non-sparking brass and the lever type push handle is a cadmium plated steel stamping. "Neoprene" or "Thokol" gaskets come with the

device, but other gasket materials are available upon request.

— ★ —

Gross Fatty Acids Folder

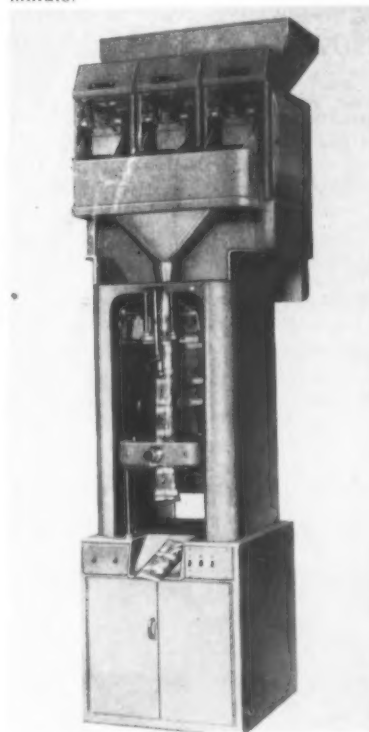
A four-page two color folder tabulating "Groco" fatty acids was published recently by A. Gross & Co., 295 Madison Avenue, New York. All vital information on stearic, oleic, tallow, and vegetable fatty acids can be seen at a glance. Also included is a list of distributors. Gross has been a maker of fatty acids since 1837.

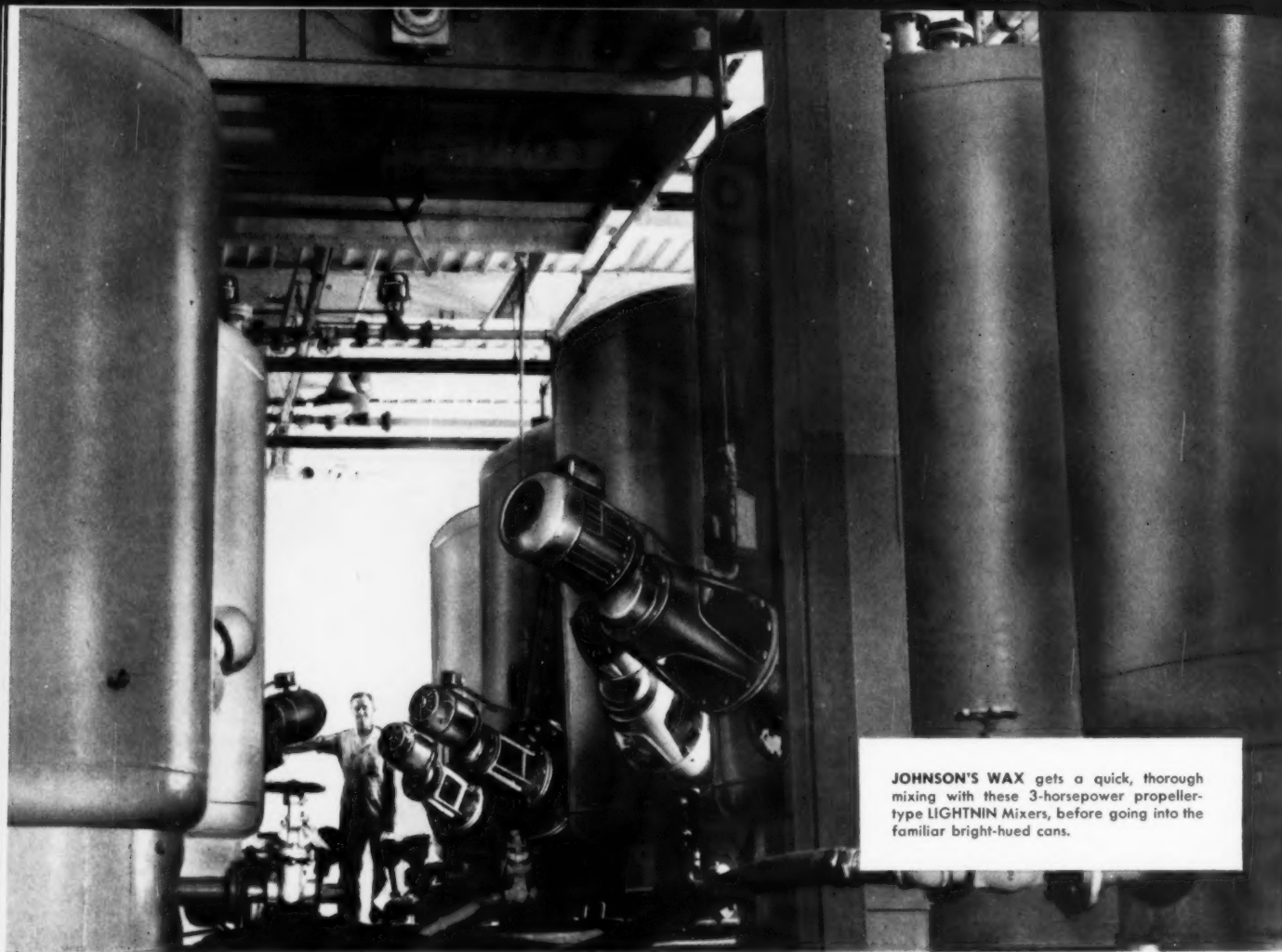
— ★ —

New Sealing Machine

Triangle Package Machinery Co., Chicago, recently developed a new automatic machine called the "Elec-Tri-Flex," which makes, fills and seals up to 60 pillow style, single or double wall bags per minute. The machine is said to be practical for any plant that packages as few as 3,000 bags per day. Copies of a new brochure describing the machine may be obtained on request to Triangle Package Machinery Co., 6633-55 W. Diversey Ave., Chicago 35.

New Triangle Packaging Machinery Co's "Elec-Tri-Flex" machine which makes, fills and seals 60 bags per minute.





JOHNSON'S WAX gets a quick, thorough mixing with these 3-horsepower propeller-type LIGHTNIN Mixers, before going into the familiar bright-hued cans.

Photo courtesy S. C. Johnson & Son, Inc., Racine, Wisconsin

How Johnson protects uniformity of finished waxes

How important is *uniformity* in keeping your product competitive?

At S. C. Johnson & Son, Inc., the entire organization from top management down gives first priority to the job of maintaining the never-varying quality of Johnson's Waxes.

Typical of Johnson's careful control measures is this final-mix operation. Just ahead of the filling machine line, finished products go into these holding tanks. Before packaging begins, LIGHTNIN Mixers rapidly bring the products to full uniformity.

Dual propellers on each LIGHTNIN Mixer create a strong, steady flow, sweeping the tank bottom and creating rapid top-to-bottom turnover plus rotation of the batch, for complete uniformity in shortest possible time.

10-minute mix

So thorough is this mixing action, that on many products only 10 minutes' mixing time is required prior to feeding to filling machine.

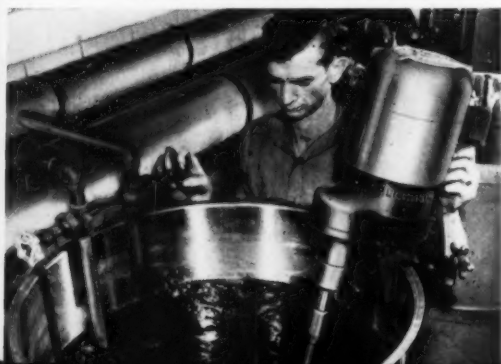
S. C. Johnson & Son, Inc. has used LIGHTNIN Mixers for many years, and

employs more than 40 LIGHTNINS in this type of service alone.

You get closest possible control of product quality and uniformity when you mix with LIGHTNIN Mixers. Every LIGHTNIN is scientifically selected for you, to deliver the exact mixing action you need, most economically. Mixing results are unconditionally guaranteed.

For fast, competent help on any fluid mixing problem, just call your LIGHTNIN Mixer representative, listed in Chemical Engineering Catalog and in Thomas' Register. Or write us direct.

MAKE ANY OPEN TANK an efficient mixing vessel, with a LIGHTNIN Portable Mixer. Thirty portable models; gear drive, direct drive; sizes 1/4 to 3 HP. Other LIGHTNINs to 500 HP.



"Lightnin" Mixers

MIXCO fluid mixing specialists

FOR LATEST MIXING INFORMATION and full description of LIGHTNIN Mixers, send for these helpful bulletins:

- | | | |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> B-102 Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP | <input type="checkbox"/> B-104 Side entering: 1 to 25 HP | <input type="checkbox"/> B-111 Quick-change rotary mechanical seals for pressure and vacuum mixing |
| <input type="checkbox"/> B-103 Top entering; propeller types: 1/4 to 3 HP | <input type="checkbox"/> B-112 Laboratory and small-batch production types | |
| <input type="checkbox"/> B-108 Portable: 1/4 to 3 HP | <input type="checkbox"/> B-109 Condensed catalog showing all types | <input type="checkbox"/> B-107 Data sheet for figuring mixer requirements |

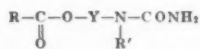
Check, clip, and mail with your name, title, company address to:

MIXING EQUIPMENT Co., Inc., 167-f Mt. Read Blvd., Rochester 11, N. Y.
In Canada: Greey Mixing Equipment, Ltd., Toronto 10, Ont.

NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine, Mac Nair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be \$1.00 per copy.

No. 2,738,333. Surface-Active Compounds and Detergent Compositions Containing Same, patented by Henry Arnold Goldsmith, Long Island City, N. Y., assignor to Colgate-Palmolive Co., New York City. The patent describes a new surface-active urea derivative characterized by the formula.

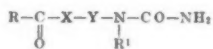


wherein



is a higher fatty acyl radical, Y is selected from the group consisting of alkylene and hydroxyalkylene radicals of 2-6 carbon atoms, and R' is selected from the group consisting of hydrogen, lower alkyl and lower hydroxyalkyl radicals.

Also claimed is a detergent composition consisting essentially of a detergent selected from the class consisting of the water-soluble anionic sulfate and sulfonate detergents, and a compound represented by the formula:



wherein



is a higher fatty acyl radical, X is a member of the class consisting of oxygen and imino groups, Y is selected from the class consisting of alkylene and hydroxyalkylene radicals of 2 to about 6 carbon atoms, and R' is selected from the class consisting of hydrogen, lower alkyl and lower hydroxyalkyl groups, the amount of said compound being less than the weight of said detergent and effective in combination therewith to increase the deterative power thereof in aqueous solution.

No. 2,731,422. Non-Soap Deter-

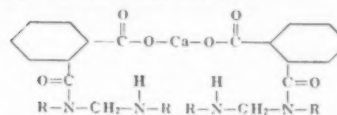
gent Compositions, patented by John Ross, Ramsey, N. J., assignor to Colgate-Palmolive Company, Jersey City, N. J. A detergent composition is covered consisting essentially of a water-soluble higher fatty acid monoglyceride monosulfate detergent having about 8-22 carbons in the fatty acyl group, and in minor proportion thereto and from about 1 to about 10% by weight of a primary saturated monohydric fatty alcohol of about 14 to 18 carbon atoms.

No. 2,733,224. Liquid Polishing Composition, patented by Thomas B. Smith and Rudolf E. Vetren, Chicago, Ill., assignors to Simoniz Company. A stable polish covered by this patent comprises: a freezable liquid carrier including water; about 1.2-7.8% by weight of wax; about 1.7-5.2% by weight of a member of the class consisting of condensation products of maleic anhydride and rosin and polyhydric alcohols, condensation products of fumaric anhydride and rosin and polyhydric alcohols, condensation products of maleic anhydride and pentaerythritol and condensation products of maleic anhydride and high molecular weight glycols; about 2.8-6.5% by weight of emulsified polystyrene; and from about 0.25-0.70% by weight of urea dissolved in the liquid carrier to inhibit precipitation of the solids on freezing and subsequent thawing of the liquid.

No. 2,726,980. Insect Repellent Amines Produced by Reacting 1,3-Butadiene and Ammonia and Method of Using Same, patented by Lyle D. Goodhue, Bartlesville, Okla., and Carolyn E. Tissol, St. Paul, Minn., assignors to Phillips Petroleum Company. A composition is patented suitable for the prevention of infestation of a roach habitat by roaches, containing as an essential active ingredient thereof a higher boiling amine product boiling in the range 307.4 to 316.4° F. at 3.7 millimeters of mercury, and a roach repellent adjuvant as a carrier therefor, which product has been prepared by reacting ammonia and 1,3-butadiene employing a catalyst selected from the group consisting of alkali metal hydrides and sodamide at a temperature within the range of 50 to 500° F., in liquid phase, said catalyst being present in an amount within the range of 0.05 to 15 weight per cent of said reactants which are present in a ratio of 0.33:1 to 30:1 ammonia to 1,3-butadiene for a period of 5 minutes to 3 hours and fractionally distilling the reaction product thus obtained to separate said higher boiling amine product.

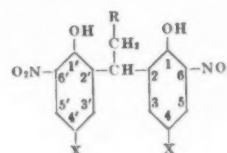
No. 2,742,392. Insecticidal Composition Containing Pyrethrin and a Calcium Phthalamidate, patented by Herschel G. Smith, Wallingford, Troy L. Cantrell, Drexel Hill, and Mark L. Hill, Boothwyn, Pa., assignors to Gulf Oil Corp., Pittsburgh, Pa. The patent discloses an insecticidal composition comprising a pyrethrin

insecticide toxicant, a solvent therefor, and a substantially neutral calcium salt of a phthalamic acid having the following formula:

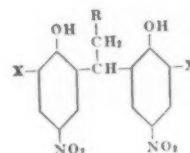


wherein R is an alkyl group containing from 8 to 20 carbon atoms, said calcium salt being present in the amount of from about 100 to about 15,000 mg./100 cc. solution.

No. 2,739,941. Germicidal Soap Composition, patented by Max E. Chiddix, Easton, and Stanley H. Hesse, Bethlehem, Pa., assignors to General Aniline & Film Corp., New York, N. Y. A germicidal soap composition is patented consisting of a detergent soap and 0.5 to 5.0% by weight of a halogenated alkylidenebis nitrophenol selected from the group consisting of those of the following formulae:



and



wherein R is selected from the group consisting of hydrogen, methyl, ethyl, chloromethyl, and trichloromethyl groups, and X represents a halogen selected from the group consisting of chlorine, bromine and iodine.

No. 2,738,335. Method of Producing Solid Soap Products from Potash Soaps and Products Obtained Thereby, patented by Madison L. Sheely, Western Springs, and Emmett P. Glynn, Chicago, Ill., assignors to Armour and Co., Chicago, Ill. The patent describes a solid product in marketable form, consisting substantially entirely of potassium tallow soap composed of potassium salts of tallow fatty acids having a titer of at least 40°C. in admixture with from 1 to 4% by weight of water.

No. 2,739,130. Cleaning Composition, patented by Wesley E. Combs, Okmulgee, Okla. A process is covered for cleaning an object containing foreign matter deposited thereon comprising depositing on said object a composition consisting essentially of water and nicotine, the nicotine being in the range of about .007% to about 33% by weight of the total composition, and rubbing said composition on said object, whereby the foreign matter on said object is

loosened and removed from said object.

No. 2,739,163. Manufacture of Hard Odorless Soap From Low Grade Fats and Oils, patented by Klaus Appuhn, Vina del Mar, Chile, assignor to Compania Industrial Vina del Mar, Chile. The patent teaches a continuous process for the manufacture of hard, odorless soaps from highly unsaturated long chain fatty acids produced from low grade or marine animal fats and oils obtained by splitting such fats and oils by a Twitchell reagent, said process comprising, treating said fatty acids with activated carbon, then anhydrously saponifying such treated acids at a temperature between 300 and 350°C. with an excess of molten alkali at substantially atmospheric pressure.

No. 2,743,208. Dry Free-Flowing Iodine Compositions, patented by James E. Marcuse, New York, N. Y., and Martin M. Reynolds, Old Greenwich, Conn., assignors to West Disinfecting Co., Long Island City, N. Y. Covered is a dry, free-flowing composition readily soluble in water at temperatures of from 5° to 50°C. which contains as its essential constituents from 60 to 70 parts urea, from 3 to 10 parts of free iodine and from 25 to 35 parts of an ethylene oxide alkyl phenol condensate the alkyl group of which contains from 8 to 32 carbon atoms and which contains from 5 to 60 mols of ethylene oxide per mol of alkyl phenol.

No. 2,730,507. Method of Making Dustless Soap Powder, patented by Purdy Bradford, Palos Park, Ill., assignor to Swift & Company, Chicago, Ill. A method is disclosed of treating comminuted soap to agglomerate soap dust particles therein into free flowing granules. The method comprises mixing said comminuted soap, at least about 5% by weight of a saponifiable higher fatty acid, and a sufficient amount of alkali to saponify said higher fatty acid; and thoroughly mixing the ingredients to form well-defined granules.

No. 2,730,530. Fatty Acid Anhydrides, patented by John L. Ohlson and Charles W. Hoerr, Chicago, Ill., assignors to Swift & Company, Chicago, Ill. The patent teaches a process for the manufacture of acid anhydrides which comprises contacting a reactant having a critical temperature above 150° C. selected from the group consisting of fatty acids having at least 3 carbon atoms, dicarboxylic acids, the methyl and ethyl esters of such acids, and mixtures thereof, with an "activated" alumina catalyst at a temperature below 300° C. and between 150° C. and the critical temperature of said reactant within a zone maintained at sufficient pressure to keep the reactant in the liquid phase during its contact with said catalyst.

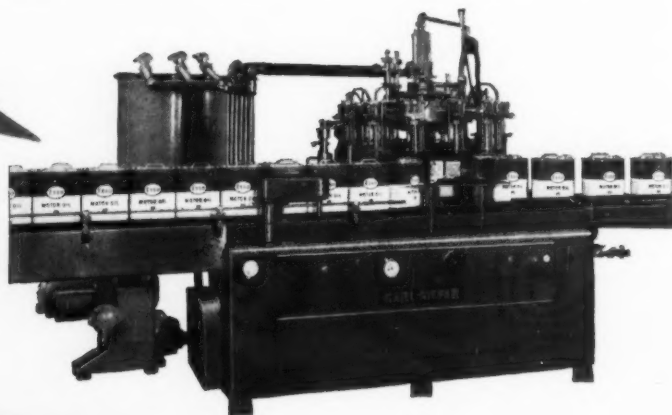
No. 2,731,337 Herbicidal Composition Comprising 3-(P-Chlorophenyl)-1,1-Dimethyl-Urea, patented by

Henry L. Morrill, Clayton, and Ferdinand B. Zienty, Brentwood, Mo., assignors to Monsanto Chemical Company, St. Louis, Mo. The patent teaches a process for preparing free-flowing herbicidal composition containing 3-(p-chlorophenyl)-1,1-dimethylurea and a solid absorbent carrier, the step comprising intimately mixing 3-(p-chlorophenyl)-1,1-dimethylurea, a homo-hydroxy substituted aromatic compound, and a solid absorbent carrier, in proportions to give a dry product, the temperature of mixing being below the melting point of 3-(p-chlorophenyl)-1,1-dimethylurea, the proportion of 3-(p-chlorophenyl)-1,1-dimethylurea in respect to the mono-hydroxy substituted aromatic compound being such as to produce a homogeneous liquid composite having a freezing point below that of 3-(p-chlorophenyl)-1,1-dimethylurea, the hydroxy substituent of said mono-hydroxy aromatic compound being attached directly to the aromatic nucleus.

No. 2,731,339. Low Volatility Herbicidal Compositions. William R. Davie, Pittsburgh, Pa., assignor to Pittsburgh Coke & Chemical Company, Pittsburgh, Pa. A cold stable herbicidal concentrated solvent solution of a 2-ethyl hexanol-1 ester of at least one halogenated phenoxyacetic acid selected from the group consisting of 4-chloro-2 methyl phenoxyacetic acid, 2,4-dichlorophenoxyacetic

(Turn to Page 181)

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Products and PROCESSES

Mercaptan Skin Cleanser

A skin cleansing composition which will remove nicotine and other stains consists of a dermatologically innocuous mercaptan in an alkaline medium in combination with an abrasive such as pumice. The ingredients are so adjusted that the composition itself possesses (or in association with water will possess) a pH from nine to 13, preferably about 12. This, it is claimed, will not cause discomfort to the skin under the conditions of use. The mercaptan exerts a reducing action on the outer layers of the skin keratin thus softening them and making them more easily removable by the abrasive ingredient.

In addition, the product may contain other conventional ingredients such as a detergent, kaolin, glycerine, etc. It comes either in solid or paste form and in use is rubbed gently over the stained part of the skin until the stain is removed. British patent 745177, 1956, Ashe Laboratories, Ltd., Leatherhead, Surrey.

Vinyl Light Stabilizer

A new light stabilizing system for vinyl has been developed by Monsanto Chemical Co., St. Louis, Mo., it was announced in May. Preliminary tests indicate that the new stabilization provides about three times the outdoor durability previously obtainable in vinyl plastic. Monsanto does not produce or sell stabilizers but has made patent application on the light stabilizing system as it did in the case of the heat stabilizing system introduced in 1951. The latter is currently used in about 75 percent of transparent vinyl film formulations.

Plotting Soap Diagrams

Basic tests necessary for tracing phase diagrams are demonstrated with sodium soap: Varying quantities of sodium chloride and water are added to 80 parts tallow

and 20 parts coconut oil. These mixtures are enclosed in sealed glass tubes and placed in a thermostat, centrifuged, and rapidly cooled with a combination of acetone and sulfur dioxide. The phases are dissolved in a mixture of ethylene glycol and iso-propylalcohol and examined by titration of the fatty acids with perchloric acid and of sodium chloride with silver nitrate. Values obtained in 35 runs are tabulated and graphically represented. M. Loury and A. Prevot in *Revue Franc. corps gras* 2, 859-62 (1955), through *Journal of Am. Oil Chemists' Soc.*, vol. 33, p. 236.

Optical Hair Brighteners

Fluorescent compounds of the substituted 4-methyl coumarin group may be incorporated in detergent based shampoos to effect optical brightening of human hair. Suggested for this purpose are 4-methyl-7-diethylaminocoumarin and 4-methyl-5,7-dihydroxycoumarin which are substantive to hair in a weakly acidic solution. Sulfated detergents suitable for such formulations include sulfated lauryl alcohol, the sulfated monoglyceride of coconut fatty acids, and sulfated alkanolamides. Used in the form of their ammonium or ethanolamine salts they are highly water soluble. Although only slightly water soluble, the fluorescent coumarin derivatives do dissolve in concentrated solutions of sulfated detergents. A small proportion of alcohol may be included in a clear shampoo to ensure that the optical bleach remains in solution when the final product is exposed to low temperatures.

Greatest substantivity to hair is exhibited by 4-methyl coumarins at pH ranging from 4.5 to 6.5. Such mild acidity does not interfere with the cleansing or foaming power of the shampoo, which may incorporate an organic or inorganic acid additive.

At a concentration of 0.2 percent, 4-methyl-7-diethylaminocoumarin has a definite brightening effect on the hair. Higher concentration up to a maximum of one percent may be preferred, but it is advisable to use the lowest concentration imparting the desired lustre to the hair to eliminate the hazard of accumulation or build up of the dyestuff on the hair, with consequent discoloration.

Fluorescent dyes as hair brighteners in shampoos are patented in France (patent #1,094,336) by Colgate-Palmolive Co. Through *Schimmel Briefs*, April 1956.

Car Cleaner-Polishes

Single operation car cleaner-polishes and non-flammable furniture polishes are the subject of an illustrated article by John A. Stapp, available in reprint form from the Silicones Division, Union Carbide and Carbon Corp., New York. Formulas and procedures for the manufacture of such polishes are supplied. Presence of an increased ratio of silicones renders automobile polishes easier to apply and able to remove unwanted oxidized paint from car surfaces. Use of non-flammable silicone waxes reduces the fire hazard in furniture polishes. The paper also describes the properties of silicone oils suitable for incorporation in polishes for refrigerators, dish washers, washing machines and other appliances.

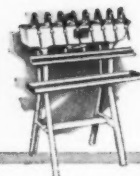
El Dorado Sales Reps.

El Dorado Division of Foremost Food and Chemical Co., San Francisco, has appointed two new sales agents, it was announced recently by Arthur Berry, Foremost-El Dorado president. They will handle sales of the division's coconut oil fatty acids, methyl esters, and other products. Harry Holland & Sons, Inc., Detroit, has been named exclusive sales agent for Michigan and northwestern Ohio, and Howard Dock, Cincinnati, for southern Ohio and eastern Kentucky.



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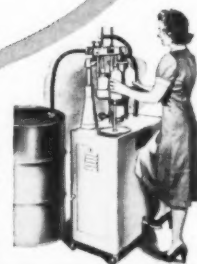
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EXPORT SALES AFFILIATE

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By E. G. Thomssen, Ph.D.

THE problem of rising costs is a universal one faced by production men in all types of industries. Wages, and costs of raw materials, machinery and maintenance are steadily going up.

At times there is a conflict between management and production supervisors as to the advisability of replacing old equipment with new. Factory men are pre-occupied with wage scales and hourly wage-rates to produce an item, units of production and conservation of raw materials. Management thinks more in terms of sales volume and profits. In order to modernize or expand his plant or equipment, the production man must justify the required capital expenditures. Management, at times, tends to regard such production expenditures as frozen assets.

What are the factors which determine whether modernization or expansion of a plant and its equipment will result in an ample return on the investment and thus warrant the expenditure? Included are wages for labor, fringe costs, speed of production, quality of the finished item, versatility of the machine or plant, accident incidence and depreciation.

The provision for wages may be readily estimated. The usual assumption is that an old or new machine requires a full time operator. In certain cases, it may be possible to hire a woman at a lower wage than a man to operate a machine unless union contracts preclude this. In these days of fringe benefits, life insurance, paid vacations, pensions, etc., their cost must be added to wages paid for direct labor.

Speed of production is another consideration. New and improved machines usually produce more units or greater hourly volume

than older equipment. A guarantee of output for a piece of equipment is usually made by its manufacturer. Such a guarantee is based upon actual tryouts in the pilot plant of the machine maker or upon actual production experience in users' plants. It is essential that the manufacturer guarantee the output claimed for the machine. By knowing the rate of output and dividing it by the amount to be paid in wages to the operator, the amount paid in wages per unit can readily be determined on a daily, weekly, monthly or yearly basis by multiplying by the number of working days.

In many cases a line or plant may be producing only one size or a single type of item and thus the purchase of a new piece of equipment may not be justified based on present volume of sales. In such cases, the versatility of the new machine plays a very important part in the decision to buy. It may be possible to turn out several different types or sizes of a particular product with the new machine. Rapid change-over with a minimum number of parts should also be considered. For example, a filling machine may be adapted to fill liquids or pastes. The volume of either may not warrant the

expenditure for a new machine. But if both can be handled by one machine, the investment can be justified.

The quality of the finished product is extremely important. If the older machine does the job neater, but slower, than a new piece of equipment, it would not be advisable to purchase the new machine. The consumer is quick to detect a reduction in the quality of a product he has become accustomed to using. For this reason a new piece of equipment should produce a better product.

Interruptions caused by equipment breakdowns or change-overs are factors which should be considered carefully. This is particularly serious in continuous processing operations involving a sizeable number of persons who are dependent on the machine to keep them busy. If the machine is not operating even for a short time, the loss involving production and wages mounts rapidly. Time and money wasted during change-over, and the possibility of injury to new operators should be thoroughly investigated. If the new machine is safer than an older one, lower rates for workmen's compensation are possible. Savings in wages may be possible by changes in plant layouts.

Three other items enter into the decision to purchase a new machine: capital investment, maintenance cost and depreciation.

Capital investment may be large or small. If large, a higher inventory figure may result in higher taxes. On the other hand, depreciation may offset this. Ordinarily, the life of a machine is from 10 to 20 years. It is possible to take a larger percentage of depreciation during the earlier years of new installations. This is advantageous from the tax standpoint. Good maintenance extends the life of any machine and it is a sound idea to figure this on the high side. At times it may be possible to improve the operation of

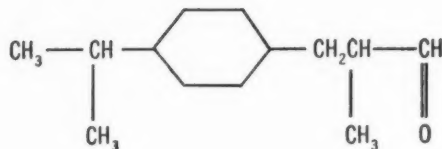
Dr. E. G. Thomssen



CYCLAMAL[®]

(CYCLAMEN ALDEHYDE)

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Molecular
Weight:
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Typical Specifications:

PHYSICAL APPEARANCE:	Nearly colorless liquid.
ASSAY:	93% minimum Aldehyde content.
ODOR TYPE:	Floral; Lily-of-the-Valley or Muguet.
SOLUBILITY (@ 20°C):	10 parts soluble in 15 parts 80% Ethyl Alcohol.
STABILITY:	Lasting in soaps, cosmetics and of a high quality which permits its use in the most expensive perfumes.
REFRACTIVE INDEX ($n_{\frac{20}{D}}$):	1.5055
SPECIFIC GRAVITY ($\frac{25}{25}$):	0.950
SUGGESTED USES:	As a base for Lily-of-the-Valley and Muguet perfumes to 5%; as a floral modifier from 1/4 % to 5%.

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a machine with one's own maintenance crew. Ordinarily, this is an allowable tax deduction. With automation becoming increasingly important to large scale production, the adaptability of new machines to this principle should also be kept in mind.

When all of these factors have been carefully evaluated, the final decision is to be made. The decision of whether or not to buy is contingent upon the length of time required to recover the capital investment. There used to be a rule that "if you can't pay for a new machine in one year, it won't pay to buy it." This rule no longer applies. A better method is to put all the cost figures together and divide the cost of the new installation into the annual savings. This gives the annual return in dollars. Additional intangible, but real, benefits such as better work, less noise, stimulus to increased sales, etc., should also be considered in making the decision of whether or not to buy.

Stair Climbing Truck

A HAND truck that can move loads up and down stairs is distributed by General Industrial Co., Chicago 30, Ill. Trade named "E-Z Stair Climbing Hand Truck," it is equipped with two rocker-arms that act as an extra pair of wheels and keep the truck constantly in line for friction-free travel. One man can move loads up or down without danger of skidding or dragging. There is no peril from injury to the operator or spillage of the load.

Drum Dryer

A SINGLE roll drum dryer that permits continuous drying of many slurry materials is now available from Davenport Foundry Co., Davenport, Iowa. A thin film of material clings to the steam heated revolving drum and is removed when dried by a scraper blade. The material may then be conveyed to a convenient point for further processing. The drum is three feet in diameter and seven feet long. A

catalog covering the drum dryer is available. Further information on the company's line of pressing and cooling equipment may also be obtained by writing Davenport.

Grinding Mills

A COMPLETE line of grinding mills, including conical mills, disc-roll mills, tube mills and road mills is now being manufactured by Harding Co., York, Pa. These mills cover most situations where milling is required.

Fatty Acid Esters

FATTY acid esters available as laurates, oleates, ricinoleates or stearates are available from Carlisle Chemical Works, Reading, Ohio. These esters may be used as

Polyethylene Drum Plugs

Silicones are now being shipped by Dow Corning Corp., Midland, Mich., in drums featuring threaded polyethylene plugs. The polyethylene closure assembly is made to Dow Corning's specifications by Rieke Metal Products, Auburn, Ind. In combination with the phenolic lined drums in which silicones have been shipped since 1954 this new plug provides protection against contact with metal and consequent contamination of the emulsions. An inner tap-out seal protects the drum contents in the event the plug is lost.

anti-foaming agents, emulsifiers, thickeners and wetting agents. Full information is available upon request.

Phosphate File

VICTOR Chemical Works, Chicago 67, Ill., recently announced the availability of a new concept of literature on their line of phosphates. Individual "Victafiles," as the booklets are designated, are prepared for particular phosphate-consuming industries. Those of interest to readers of this publication include: soaps and detergents, dentifrices, water treatment and agriculture.

Perl Anti Foam Valve

Perl Machine Manufacturing Co., Brooklyn, N. Y., recently announced development of a new type filling valve designed for the foamless handling of liquid soaps, waxes, insecticides, etc. The new valve which is claimed to fill at highest speeds without foaming, or dripping is available on all Perl straight line filling machines for both gravity and vacuum feed.

Pall Mall Moves

Pall Mall Manufacturing Co. has moved to 11-07 43rd Road, Long Island City 1, N.Y., effective May 21. Telephone numbers remain unchanged.

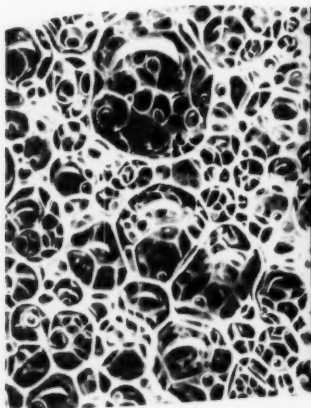
New polyethylene closure assembly for phenolic lined drums used by Dow Corning Corp., Midland, Mich., to ship silicone mold release emulsion.



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EXCEPTIONAL SUDSING AND EMULSIFYING
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90.0% minimum active drum dried flake

* Only cold processing at temperatures below freezing can produce *concentrated uniform* sulfonation! Every micelle produced in solution from Pilot HD-90 is homogeneously effective for such use as household sudsers, industrial detergents and scouring powders. Cold processing eliminates undesirable side reactions, hydrocarbon odors, and any rearrangement of the molecular structure. Pilot HD-90's high quality in the making and mixing of dry products is equally applicable to the manufacture of liquid detergents. Pilot HD-90's concentrated and sulfate-free properties *eliminate filtering*; give liquids the highest sudsing and cleaning powers obtainable. Write for formulas and samples. *Only Pilot HD-90 Detergent features this premium quality at competitive prices!*

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SOAP PLANT *Observer*

By John W. McCutcheon

LAST month and, in fact, for several months now, reference has been made in this column to "Automation" and its relation to the soap industry. Recently the subject has been in the news here and abroad. Late in May, for example, a strike was called in England over the introduction of such methods in industry. At the same time, a conference was called in New York City for an open discussion on automation between labor and management.

Actually, the "Detergent Industry" is not now and never has been a high consumer of labor. The incentive in this direction has been medium, although the writer never knew a successfully operating plant where management did not make every effort to use its labor efficiently. With growing diversification of products and increased chemical processing, the industry has taken a keener interest in recent years in continuous and semi-continuous processes which are better handled by automatic means. The reason for this is that a machine can be made to respond quicker and with greater precision than highly skilled technicians. The subject of "Automation" as it presently applies to our industry is quite confusing as far as the writer is aware from discussions with fellow workers. One reason for this state of affairs is the fact that the subject is extremely broad and can be treated in a variety of ways. Each writer also, has his own personal conception of the subject colored by his background. For example, the publication "Automatic Control" a Scientific American book published by Simon & Schuster of New York is a good book to read if you want to find out how *not* to present a subject. You walk through a labyrinth of ideas with mathematical geniuses who never come close enough to the subject to tell you anything you didn't know be-



fore you started. They may be talking sense, of course, if you are thinking in terms of "guided missile control" or solving simultaneous quadratus of the "nth" degree. But in terms of applied chemistry, the viewpoint is meaningless.

The other extreme viewpoint is that automation consists of a few basic tools such as servomechanisms which translate a faint signal such as from a dial reading into a positive remote action involving power consumption. Important as these devices are they form but a very small part of an overall process control. It is up to the automatic control engineer to select from the variety of methods available, that one which best suits the particular purpose. And the reader can be assured that a great variety of ways *do* exist for solving each problem.

The basic principle of "automation," of course, is that the product out of the reactor produces a signal "in" which exercises some control. This is termed "feed back." For example, in bleaching an oil, an activated earth is added to the heated oil in a bleach tank and the whole agitated for a certain period. Some oil is then pumped through a filter press and a sample taken to the laboratory for color. If O.K., the full batch of oil is then pumped through.

In an automatic bleach operation, the color reading would be the "feed back" control to the amount of earth added. In a batch system as above described, the color could be read continuously and a periodic adjustment of the earth made. For example, one-half of one percent of earth is added every five minutes until the desired color is reached after which the main filter would turn on and the batch would be pumped out to storage or holding tank. The timing interval, color reading and earth addition would all be under automatic operation. In this case, it is assumed that the maximum bleach effect of the additional earth would be felt in the cycle within five minutes. This is like driving a car with the steering wheel so loose that you would have to make one full turn of the wheel before the front wheels would respond.

A continuous process would be more easily adapted to automation. Suppose the heated oil and earth flowed under agitation through a cylinder one foot in diameter and 10 feet long at a rate of 5000 pounds per hour. Contact time would be five minutes under these conditions and a color exit reading coupled with the activated earth level of addition would represent a much closer control level since the quantity of material now under adjustment at any one moment would be about 400 pounds or eight percent of the hourly production. Now the object of this example is not so much to design an automatic bleaching plant here and now, as it is to present some other problems of automation which will occur so that one would understand the basic principles as applied to the detergent industry.

First, the rate, type and control of the reaction must be thoroughly understood. The detergent engineer will know this. The automation engineer will probably not know this.

Secondly, the equipment available for transfer of power, and for control must be known so the

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a long way
to find
these
properties**



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HYONIC PE 250

(100% active nonionic alkyl aryl polyether alcohol)

Gives high, persistent foam
Effective over wide range of water hardness and pH
Excellent wetting agent and emulsifier
Extremely stable in presence of acids, alkalis, inorganic salts including heavy metal salts
A powerful detergent
Suggested uses—dairy detergents and milkstone remover, car wash, antiseptic sanitizer, paint and woodwork cleaner

HYONIC FS

(100% active lauric acid alkylolamide condensate)

Superior foam stabilizer for anionics
Remarkable thickening action over a wide range of concentrations
Non-corrosive—can be stored indefinitely
Excellent detergent and wetter and shows remarkable synergism when blended with anionics or nonionics
Suggested uses—liquid dishwasher, clear liquid shampoo, bubble bath

No, it isn't necessary to explore the universe for your detergent aids since Nopco Hyonics will undoubtedly provide just exactly the properties you need and Nopco technical men will work right with you to help you produce detergents of your own specifications.

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proper choice can be made. This equipment may not be known by the average chemical engineer. For example, the varied addition of a powdered material to a liquid stream under 50 pounds back pressure may be a tricky problem. One solution would be the slurring of the earth using an oil by-pass, and pumping in the slurry through a variable speed positive displacement pump. Another problem in the same category would be the valve manipulation for switching the bleached oil through the proper lines. Cocks, motor driven valves through gear reduction, or solenoid valves are available. A reversing motor drive of a globe valve would probably be indicated here and the connection should allow instantaneous hand operation if required.

The feed back information of a preset wave length intensity of light through a filtered sample would pass through a standard servo-mechanism consisting of a synchro generator, control transformer, amplifier and synchro motor, to the speed control element of the earth-oil slurry pump. The filtration problem for color control would be probably best handled by duplicate filters, alternating periodically and self cleaning through external automatic control. The earth removing presses might or might not be continuous. In the latter case, alternating self-cleaning presses would be necessary which would require automatic equipment to put them in and out of service. The regulation as to when presses required changing would be controlled by their back pressure as would be the case with an operator present.

In the third place, the control panel would have to indicate exactly what is going on, all the time. For example, the flow of oil, earth-slurry, oil-earth mixture and filtered oil would have to be shown exactly, not as indicated by the valve settings and pump operation, but by probes within the lines themselves, so that any failure of control would be instantly located. This would apply to the operation of the

control filters and state of operation of each press (if batch type), plus recording flowmeter readings of materials in and out, plus color readings of raw oil in and bleached oil out. In all, there would be a sizable and expensive control panel involved. All electrical equipment will finally wear out. It is necessary therefore to have such controls available as will anticipate such breakdowns. For example, an auxiliary power supply, auxiliary valves and lines for alternate switching built right into the panel control board. In the case of a simple bleaching operation, where serious fire hazard, equipment damage, or personnel danger is not involved to any great extent, such safeguards would be at a minimum.

The third point above would be in the special category of the automation engineer plus the instrumentation manufacturer. Their jobs might overlap considerably.

Fourth, the scope of the controls must be clearly established. For example, an automatic plant might be fed an oil not bleachable to the standard established, with any amount of earth. No matter how carefully oils are purchased on test and blended, the color characteristics will vary within the plant. Therefore a laboratory analysis on the feed stock just prior to bleaching would indicate the approximate amount of earth and color obtainable. The control operator noting the color of the bleached oil could re-set from the panel an acceptable color standard. Or he could leave the color standard intact and set a maximum on the earth used, causing over the limit oil to pass to special storage. This could be made automatic by placing a limit switch on the earth supply valve. At this point, our mathematical friends would feed into a computer the price of oil, price of earth, raw oil color and laboratory bleached oil curve and the machine would automatically adjust either the percent of earth or bleached color for maximum results.

The thought to be left here is

that automation will probably be an important factor in the detergent and fatty oil industry soon. That it is a complicated business which requires a special combination of talents. That some provision now should be made by the industry to train men for this particular field. Why not a scholarship in the subject by the Association of American Soap & Glycerine Producers? Perhaps the American Oil Chemists' Society would call a special training symposium on the subject! It is noted that the Society provides one tail-end lecture on the subject in the July programme.

— ★ —

Dow Moves Chicago Office

The Chicago sales office of Dow Chemical Co., Midland, Mich., will move this fall from its present location on South LaSalle Street to 6000 Touhy Avenue. The new quarters will occupy about 11,000 square feet of a 27,000 square foot single story office building, which is part of a new office center in the northwestern sector of Chicago, Donald Williams, vice-president and director of sales said when making the announcement. Under the management of Henry S. Pierson the Chicago facilities service markets in the northern half of Illinois and Indiana, the southern part of Wisconsin, and Iowa and Nebraska.

— ★ —

Improved Varley Sanitizer

James Varley & Sons, Inc., St. Louis, has introduced an improved "king-size" form of "Q-Tabs" quaternary ammonium germicide tablets, it was announced recently by Jack C. Varley, president. The product is now available in 100-tablet containers.

Designed as a sanitizer for glassware and utensils, "Q-Tabs" are said to dissolve in water within a few seconds, leaving neither film nor smudges on finished glassware. More information is available on request to James Varley & Sons, Inc., 1200 Switzer Ave., St. Louis 15, Mo.



There are no finer...Shulton, the world's leading producer, has a heliotropine to suit your particular requirements. Perfume grade, setting the highest standard in odor quality; soap grade, combining fragrance excellence with fragrance economy; and technical grade, providing a chemical of highest purity for industrial applications. Then, too, if stability of color and odor are a problem in special alkaline situations, investigate Shulton's Heliotropine Liquid.

Technical data, samples, and additional information, available on request.

SHULTON
FINE CHEMICALS



NEW YORK OFFICE
200 WEST 42ND STREET
NEW YORK 36, N.Y.

Packaging...

AEROSOLS • LIQUIDS • PASTES • POWDERS

New "Kleenabole" liquid cleanser for toilet bowls, urinals and equipment, announced recently by U. S. Sanitary Specialties Corp., Chicago, is packed in one quart silk screen printed (in white) bottles of Maryland Glass Co., Baltimore. Metal cap is red. Product also comes in six gallon cans of Continental Can Co., New York. Screen printing is done by Maryland Glass Co.'s Chicago representatives Berman Brothers.

Automotive
Chemicals
Cleaners
Detergents
Deodorants
Disinfectants
Floor Products
Insecticides
Laundry Bleach
Metal Cleaners
Moth Products
Polishes
Shampoos
Shave Products
Soaps
Liquid Starch
Toiletries
and other
Chemical Specialties

*A market for over 20
billion packages annually*





PROTECTION is our business, too



Just as today's tireless doctors, nurses and medical researchers work to protect you and your family from sickness and disease—J&L Steel Containers protect your products by providing dependable packaging that assures safety in transportation and storage. Precise fabrication provides accuracy in all fittings and closures.

J&L drums and pails are chemically cleaned and dried by the JaLizing process. This assures a clean and dry, rust-inhibiting surface and increases the adherence and durability of decoration and interior lining.

Special protective interior linings are available to provide the best possible packaging for your products.

JaI-Coat, J&L's lithographing process, applies your trademark and sales message to the finished container . . . *no side seam touch-up is ever required.*

Plants located at Atlanta, Ga.; Bayonne, N. J.; Cleveland, Ohio; Kansas City, Kansas; Lancaster, Pa.; New Orleans, La.; Philadelphia, Pa.; Port Arthur, Texas; and Toledo, Ohio.



J&L's Utility Pail stacks and ships without carton. Head design assures continuous pouring. A variety of openings are available.



Jones & Laughlin
STEEL CORPORATION - PITTSBURGH

CONTAINER DIVISION
405 LEXINGTON AVE., NEW YORK 17, N. Y.

How to save up to 6¢ per unit

on your
**AEROSOL
PRODUCT**



It doesn't take a very sharp pencil to figure the profit you are losing when you ship your aerosol product from an eastern or mid-western warehouse to the west coast. Depending on the method of shipment, it can easily add 2¢ to 6¢ per unit to the cost!

No longer is it necessary to sustain these losses. By taking advantage of G. Barr & Company's new Los Angeles aerosol filling plant, high transportation costs can be **EXTRA PROFITS** for you and your west coast customers need not wait days for merchandise to arrive from the east . . . it can be made in the same market as it is sold.

With three complete, strategically located plants available—New York, Chicago, Los Angeles—arranging your custom aerosol production can be simplicity itself. Only one management to deal with, yet all three plants operating in accordance with the same high standards to exactly meet your specifications.

Whether your aerosol product is packaged in metal or glass, in thousands or millions of units . . . whether you have a product now on the market, or in the experimental or idea stage, you cannot afford to overlook the production and product development facilities G. Barr & Company provides.

We will be pleased to present exact figures.

WRITE, WIRE OR PHONE:

G. BARR & COMPANY

3601 SO. RACINE AVE., CHICAGO 9, ILLINOIS

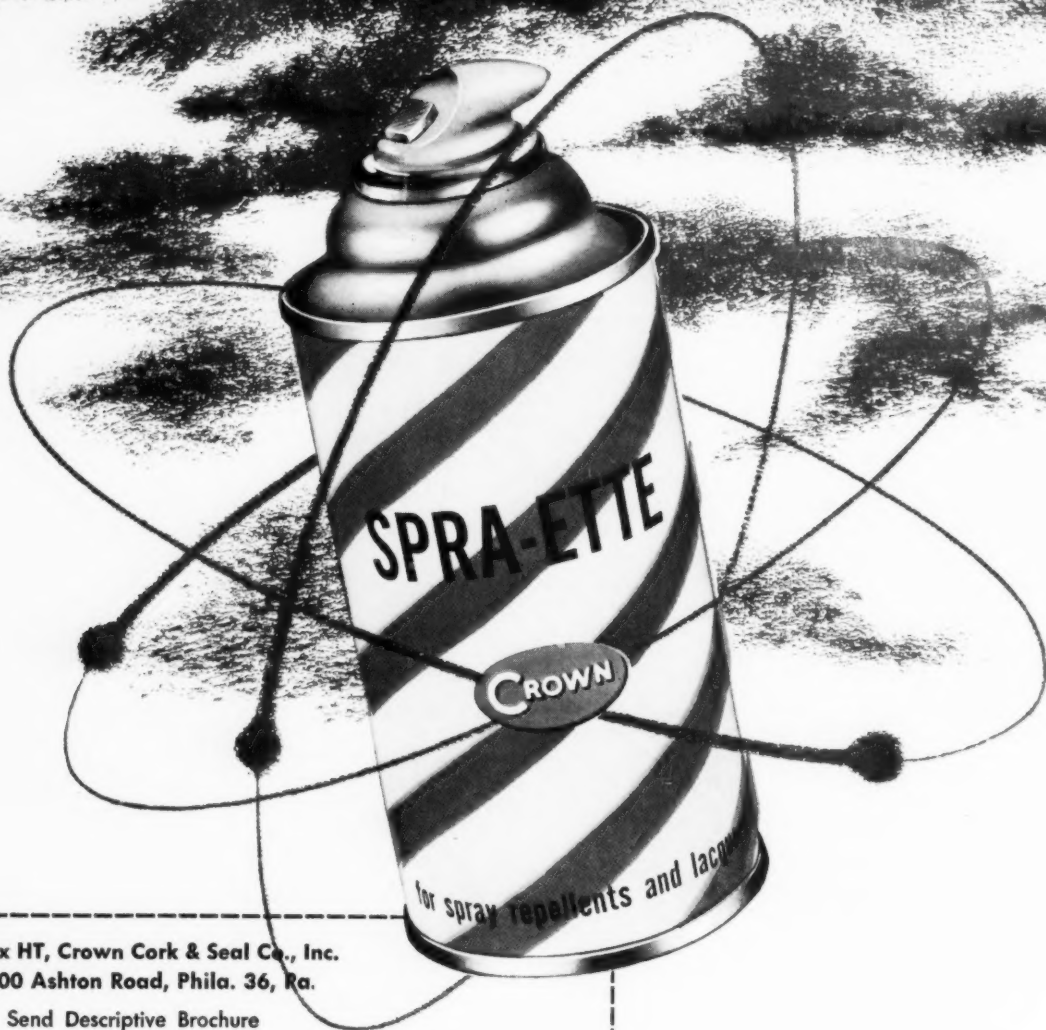
PLANTS IN: LOS ANGELES • CHICAGO • NEW YORK

JUNE, 1956

101



ZOOMS AHEAD



Box HT, Crown Cork & Seal Co., Inc.
9300 Ashton Road, Phila. 36, Pa.

- ☐ Send Descriptive Brochure
☐ Send Sales Representative

NAME _____

COMPANY _____

TITLE _____

ADDRESS _____

SEND FOR FREE DESCRIPTIVE BROCHURE!

ASK A CROWN SALES REPRESENTATIVE TO CALL!

**— TO EVEN GREATER LEADERSHIP —
IN AEROSOL PACKAGING BY
SUPPLYING THE INDUSTRY WITH
NEW 12 oz. SPRA-ETTE CONTAINER**

"SPRA-ETTE" is Crown's New Companion To Famous Spra-Tainer,
The Original and Foremost Aerosol Package In The Lightweight, Consumer Field

NOW you can fill *all* your needs for metal aerosol containers by coming to Crown. Drawing on long experience with seamless Spra-Tainer, Crown engineers have designed a superior fabricated aerosol package for manufacturers of insecticides, hair sprays, paints, etc. Second only to Spra-Tainer, "SPRA-ETTE" is the top container of its kind on the market.



12 oz. SPRA-TAINER

12 oz. SPRA-ETTE



Advantages of "SPRA-ETTE"

*Crown's success in aerosols is unparalleled. At every step you get the benefit of accumulated "Know How" which just doesn't exist elsewhere.

*Interior Coatings of Proved Dependability.

*In "SPRA-ETTE" as in Spra-Tainer, you get Crown's exclusive, foolproof technique of seating and sealing-in valves.

*Structural Strength and Dimensional Stability Equal to Spra-Tainer.

*Hard-Selling Label Design and Full-Color Lithography in New, Modern Plant.

*Interchangeability of filling lines between Spra-Tainer and "SPRA-ETTE" — of particular advantage to the loader.



Crown...for Better Packaging



CROWN CORK & SEAL COMPANY, INC.

PHILADELPHIA • CHICAGO • ORLANDO • BARTOW • BIRMINGHAM • BALTIMORE • NEW YORK • BOSTON • ST. LOUIS • SAN FRANCISCO

JUNE, 1956

103

OWENS-ILLINOIS ASSURES YOU A



Co-ordinated Research

Pure research into formulae and fabrication of glass, *packaging research* into processing and handling methods in customer plants, and *market research* into consumer attitudes, add up to greater specific value for your packaging dollar.



Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.



The Right Container

Facilities at Owens-Illinois are versatile. Talents are varied and many. So you can count on obtaining a container exactly suited to your needs—one that blends salesmaking beauty, product protection and utility in the proportions required to attract customers.

Battery Acid, Tire Cleaner or Auto Polish—



COMPLETE PACKAGING APPROACH



The Right Closure

Know-how as to the best available liner and closure—best for packing, displaying, or using a specific product—may well be one of the most important single points through which expert packaging counsel will reward you many times over.



Needed Fitments

With emphasis on the word "needed," Owens-Illinois specialists are keenly aware of sales benefits possible through use of plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.



Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

you can ride to greater sales...



*with an Owens-Illinois
package that sells through
convenience in use*

It's a well known fact that in addition to a good product one secret to greater sales is a well designed and engineered glass package.

Glass does more than let customers see what the product looks like. It adds a sparkle and eye-catching appeal to packages displayed in the store. An attractive, easily recognized package means more repeat sales, too.

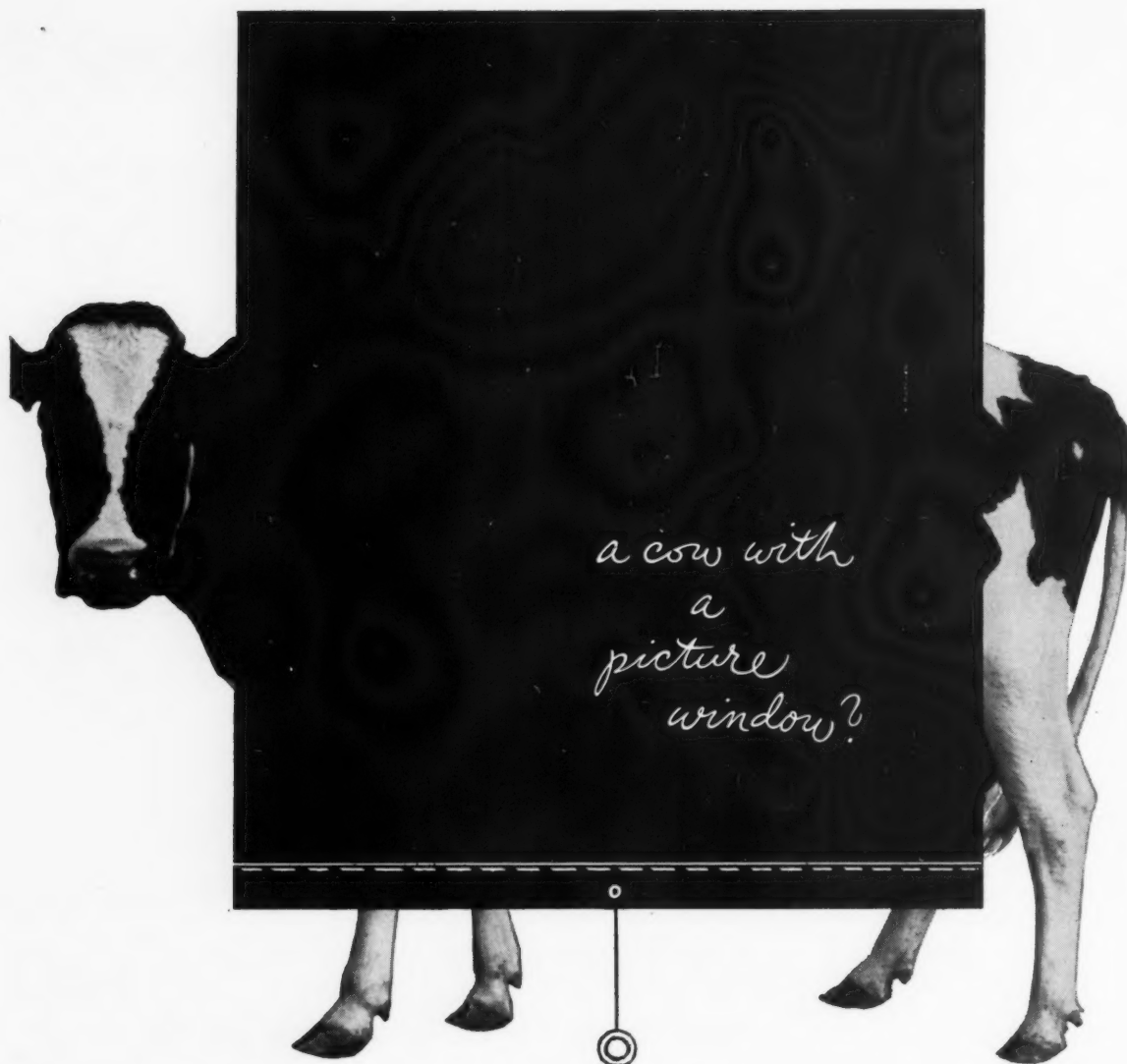
In addition, a glass package protects the contents, shows the supply

available and maintains good quality throughout many openings and closings. There's no waste or spoilage, either. A distinctively designed glass package can give your advertising campaign a tremendous boost.

Market-minded designers at Owens-Illinois will help you plan a well styled glass container with a powerful merchandising appeal all of its own. Owens-Illinois can provide glass containers of all types, capacities and designs.

DURAGLAS CONTAINERS
AN **(I)** PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO



The scientific teams at the Agricultural Research Center of Chas. Pfizer & Co., Inc., will go to practically any length in their search for new "miracle" products to make animals grow faster and stay healthy. They actually installed a "window" in a cow's stomach to study nutritional processes in their search for more effective growth stimulating feed supplements. This is just one example of the never-ending research that has made Pfizer a leading manufacturer of antibiotics.

Maintaining the purity of their products is so vitally important that Pfizer takes the scientific approach in selecting their packaging, too. In searching for a container to ship antibiotic intermediates from their huge Vigo, Indiana, plant to their eastern factories, Pfizer considered and tested many types of

containers. Inland lined steel containers were finally selected on the basis of (1) their ability to protect costly intermediates perfectly under all shipping conditions, (2) their economy, (3) their rugged strength. "We've depended on Inland drums for several years," says C. W. Smith, Vigo plant superintendent. "And they've never let us down."

NOW . . . ABOUT YOU. Maybe your product doesn't demand the extreme care that must be used in packaging wonder drugs. But whatever you make, and no matter how carefully you make it, the follow-through of skillful packaging is too important to be overlooked. For complete information on new developments in steel packaging that may solve your problems, write Bob Boecher, Dept. 313D today.



Full line of steel and stainless steel shipping containers, including galvanized and heavy duty ICC drums.

INLAND STEEL CONTAINER COMPANY

Division of Inland Steel Company • 6532 South Menard Avenue
Chicago 32, Ill. • Plants: Chicago, Jersey City, New Orleans,
Cleveland, Greenville, Ohio.

"Another product safely shipped in Inland 'protection-eered' Containers"

Packaging NOTES

Aerosol Exhibit in GCT

Almost 100,000 New Yorkers watched aerosol products being made in a demonstration presented by the General Chemical Division of the Allied Chemical & Dye Corp., New York, from May 28th to June 12 at the Investment Information Center of Merrill Lynch, Pierce, Fenner and Beane in Grand Central Terminal.

During each of 20 demonstrations presented daily during the two-week exhibit, an aerosol shave cream and air freshener were made in front of the audience as examples of the two ways of producing aerosols, the refrigeration and pressure-filling methods.

Visitors at the exhibit also were given a preview of new types of aerosols, including a spray-on bandage, baby powder, hair dressing, after-shave lotion, iodine antiseptic and window cleaner.

Moves N. Y. Office

Anchor Hocking Glass Corp., Lancaster, O., and its subsidiaries, Carr-Lowrey Glass Co. and Standard Glass Manufacturing Co., announced late last month the relocation of their New York sales offices and display rooms. The new address is 415 Madison Avenue, New York 17, telephone TEmpleton 8-9300.

Crown Can Names O'Neill

James F. O'Neill has been appointed sales representative in the New York district for the can division of Crown Cork & Seal Co., Baltimore, it was announced last month by Robert J. Seibert, northeast area sales manager for the division.

Having joined the firm as a sales trainee in 1954, Mr. O'Neill later served as assistant area sales manager. Prior to joining Crown he served with the U. S. Forces in Korea. His headquarters will be at

Crown Cork & Seal's New York office.

SIPMHE Appointments

W. Vernon Swofford, package engineer of Sefton Fiber Can Co., St. Louis, has been appointed general chairman of the 1956 11th annual Protective Packaging and Materials Handling Exposition, which will be presented in St. Louis, Oct. 22-25 by the Society of Industrial Packaging and Materials

Handling Engineers, it was announced in May.

Elmer A. Kruse, supervisor of packaging specifications, Wagner Electric Corp., St. Louis, has been appointed chairman of the planning committee for the SIPMHE-sponsored technical short course in protective packaging and materials handling that will be presented concurrently with the exposition by St. Louis University.

Wilmer J. Balster of Don L. Quinn Co., Chicago, has been named chairman of the protective packaging and materials handling competition held as part of the exposition.

Part of crowd watching aerosol demonstration at Grand Central Terminal, New York, held May 28 to June 12 at the Investment Information Center of Merrill Lynch, Pierce, Fenner and Beane. Aerosol demonstration was put on by General Chemical Division of Allied Chemical & Dye Corp. Lower photo is close up of John Barry showing how aerosols are made.



Continental's Perma-Lining gives
100% coverage plus uniform
film thickness

Continental's *Perma-LINED* steel containers give modern protection to hard-to-hold products

Now, the 100% protection of Continental's Perma-Lined steel containers is available for chemical, paint and petroleum products. Hot-sprayed within the formed container, and fast-baked, tough enamels cover every square-inch of inner surface. Even side- and bottom-seams, often a problem, get complete, uniform coverage.

Backed by our vast experience in tailor-made packaging, Continental Perma-Linings are available for almost every chemical, paint and petroleum product. In addition, our research department is fully prepared to develop new ones for your special use.

Why not put modern Perma-Lined steel containers to work for you? Just call your Continental representative.

TAILOR-MADE
PACKAGE SERVICE

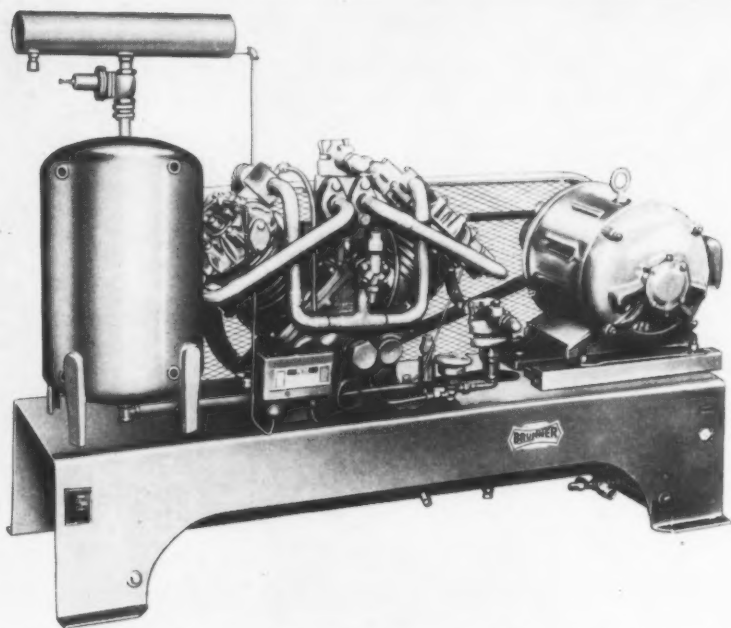
CONTINENTAL © CAN COMPANY

Eastern Division:
Central Division:
Pacific Division:

100 E. 42nd St., New York 17
135 So. La Salle St., Chicago 3
Russ Building, San Francisco 4



STEPPED-UP STORAGE TEST. Even after prolonged storage at 100°F., polyvinyl acetate glue fails to affect Perma-Linings. Never-ending research and testing by Continental scientists assures Perma-Lined steel containers of the highest quality.



New Mojonnier refrigerating unit for use with Model 702A split tank "Electromatic" aerosol filler.

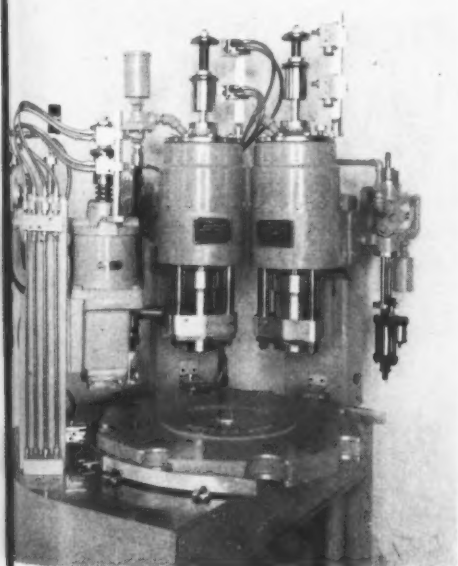
New Aerosol Filling Units

Oil Equipment Laboratories Inc., Elizabeth, N. J., recently introduced two new aerosol pressure filling machines. Both models fill cans of all major makes in sizes up to 12 ounces. A dial feed table conveys the container through the different stages of the filling process.

Model "L-1000" has a capacity of 400 grams maximum, filling

speed of 30 units per minute. Model "S-1000" has a maximum capacity of 140 grams. Both machines are accurate to one half gram. Other features of the "Pres-O-Filler" include: automatic or hand operation; propellant capacity adjustable over a range of 10 to 400 grams; pressure plate for can variation; air cylinder and propellant directly in line; and actuation by single acting

New aerosol pressure filling machine of Oil Equipment Laboratories, Inc.



air cylinder (positive return). The machines are air operated with electrical controls using dual momentary contact switches and are also equipped with adjustable "Hydro-Check" approach control.

New Refrigerating Unit

Mojonnier Associates, Inc., Franklin Park, Ill., recently introduced a new refrigerating unit for use with Model 702A split tank "Electromatic" aerosol filler. The unit consists of compressor, condenser and a single unit chiller containing both product and repellant coils.

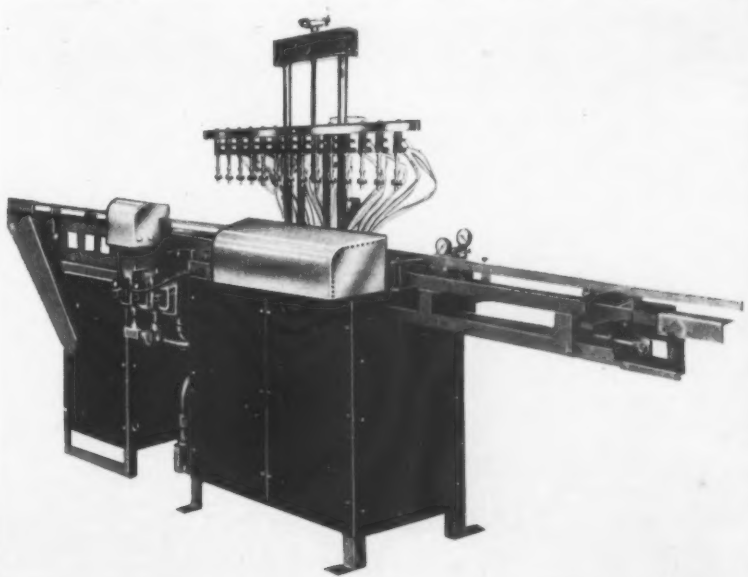
The refrigerant used in the unit is Freon 22. Controls are said to be of a new type that has been developed especially for use with this refrigerant. Complete information on the unit as well as other aerosol filling equipment may be obtained on request to Mojonnier Associates, Inc., 9151 Fullerton Ave., Franklin Park, Ill.

New Filling Machine

Packer Machinery Corp., New York, recently introduced a new straight line automatic filling machine that is pneumatically operated and electronically controlled. It comes equipped with two separate

(Continued on page facing 115)

New straight line automatic filling machine of Packer Machinery Corp.



Scraping bottom for

design ideas?



LET MARYLAND GLASS DESIGN

A BLUE OR FLINT GLASS CONTAINER FOR YOUR EXCLUSIVE USE

Sure, we make bottles and jars. But, more important to you, we design them. Our creative staff has the experience, the skill, the imagination to help you successfully redesign your old package or develop a new one. We've proved this many times.

Now we would like to prove to you that we can design a container that will sell your product. If you have a design problem, get in touch with us. No obligation, of course. Maryland Glass Corp., 2147-53 Wicomico St., Baltimore 30, Md.

PACK TO ATTRACT IN

MARYLAND

GLASS

BLUE OR FLINT
JARS AND BOTTLES

STOCK DESIGNS—A variety in blue or flint glass and a complete range of sizes is ready for immediate shipment.



What's New?



New red, white and blue lithographed drum is manufactured by Continental Can Co., New York, for "Soaperior" products of U. S. Sanitary Specialties Corp., Chicago. Drum features lug-covered lid, carrying handle and easy-pour spout. Large volume items carry lithographed label on top of can; smaller volume products have paper labels on top. Over-all design on sides of cans is the same.



"Bowlaide," sanitizer and deodorizer of Brulin & Co., Indianapolis, is packaged in "leather-weight" polyethylene one-quart bottle manufactured by Northwestern Bottle Co., St. Louis. T-neck sponge attachment is designed to fit beneath toilet bowl rim. Dispensing is controlled by squeeze of the bottle.

Monsanto Chemical Co., St. Louis, has introduced new eight-ounce bottle of "all" laundry starch, a liquid starch concentrate. Super-concentrated product makes eight quarts of starch and comes with a money-back guarantee.





"Antrol Multi-Purpose Dust" acts as combination insecticide, fungicide and miticide. Packaged in eight-ounce plastic squeeze can, product is manufactured by Boyle-Midway, Inc., New York. Container is refillable through a removable cap in base. "Antrol" is ready for use when cap cover is flipped back.

"Alberto VO-5 Hair Dressing and Conditioner," formerly sold only through professional beauty salons, has been placed on the consumer market by Alberto-Culver Company of Hollywood, Chicago. Lithographed metal top and applied color label are designed by Owens-Illinois Glass Co., Toledo, O.



Six new products of Knomark Mfg. Co., Brooklyn, N. Y., are packaged in aerosol cans under company's "Esquire" trademark. Line of items includes shoe deodorizer, spot remover, suede renewal product, leather waterproofer, leather conditioner and leather bag restorer. Each retails at 69¢.

New aerosol fish lure called "Odor Action" was introduced recently by Robert J. Kerr Chemicals, Inc., Park Ridge, Ill. Product is available in five different odors to attract as many types of fish. Compounded of essential oils and aromatic chemicals, spray may be used on both natural or artificial bait.



Textile Adjuncts Corp., Brooklyn, N. Y., recently announced that its new aerosol water-repellent product, "Water-Skipper," is now available for consumer use. Packaged in 12-ounce cans, it is said to provide water-proof protection to felt, wool and leather. "Spra-Trainer" by Crown Cork & Seal Co., Philadelphia. Valve by Precision Valve Corp., Yonkers, N. Y.



New toilet bowl cleaner called "Sparkle" is manufactured by Puritan Chemical Co., Atlanta. Designed for vitreous ware and glass surfaces, the cleaner contains hydrochloric acid together with an inhibitor. T-neck sponge attached to polyethylene bottle fits under rim of average bowl. Bottle by Northwestern Bottle Co., St. Louis.



motors and a vacuum pump and is available in 12, 14 and 16 stainless steel spout assemblies with valve type nozzles.

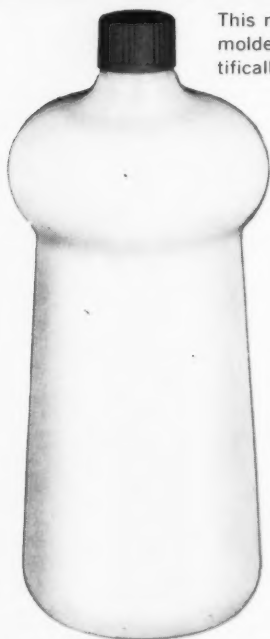
Designated as Packer Model "PVA," the machine fills all types of foamy and still liquids, hot or cold, in container sizes ranging from fractional ounces to gallons. It can be used manually for short runs if necessary, according to Packer. A separate push button control is provided for this purpose and for the

adjustment of spouts when changing container sizes.

Lueck Named by Institute

Roger H. Lueck, vice-president in charge of the research and technical department of American Can Co., New York, has been elected to the board of directors of the Industrial Research Institute. Aim of the Institute is the improvement of techniques in research administration and operation.

NEW "FEATHERWEIGHT" UNBREAKABLE BOTTLE ...90% LIGHTER THAN GLASS...100% SAFER!



This new amazing one-piece seamless container is blow-molded of "paper-thin" unbreakable polyethylene, scientifically designed for better and more economical packaging!

✓ Check these PLUS features:

✓ SAVE ON SHIPPING COSTS

This unbelievably light container is actually 90% lighter than its equivalent in glass...tare weight is drastically reduced!

✓ LOWER PACKING COSTS

The new "Featherweight" bottle can even be used to ship highly corrosive acids in standard corrugated cartons (I. C. C. Approved) with less and lighter internal packing...another cost-saving factor.

✓ SAFER TO SHIP AND USE

Completely unbreakable...danger and loss because of a broken container is gone forever! Polyethylene plug insert gives double protection against leakage.

✓ ADAPTABILITY

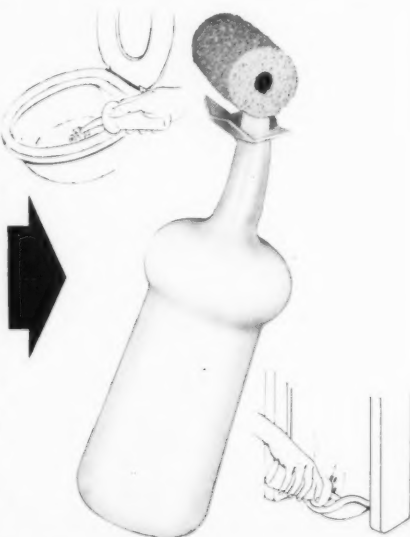
The "Featherweight" bottle is squeezable. Simple standard components convert this unique bottle into a complete ready-to-use package that will eject a fine spray, release liquids drop by drop or dispense fluids in measured quantities. No propellents are required.

Available plain or with colorful Silk Screen Labeling of your private brand name...this added service accomplished right in our plant...write for details.

New 32 oz. "Featherweight" Bottle as developed and adapted for bowl cleaning industry.

Exclusive T-neck Sponge Attachment fits under toilet bowl rim. Unit can be handled easily with one hand. Dispenser is controlled by gentle squeeze of bottle. Unique drain-back feature eliminates waste.

Write today for FREE sample and information.



Developed and Sold Exclusively by

NORTHWESTERN BOTTLE COMPANY

3144 North Broadway

(Container Division)

St. Louis 7, Missouri

Glass Container Warehouse

Anchor Hocking Glass Corp., Lancaster, O., is building a new warehouse at its Salem, N. J., glass container plant, it was announced recently by William V. Fisher, president. The steel and concrete warehouse will add 40,000 square feet of storage space and is to be ready for occupancy August 1.

New Container Facilities

Container Research Corp., Westport, Conn., recently announced the establishment of plastic molding and forming facilities in Manlius, N. Y. At the same time it announced the development of low cost plastic and paper combination throw-away containers of a novel type. This line will soon be available in bulk quantities.

Represents Bennett

The appointment of A. J. Passano as southern representative for Bennett Industries, Inc., Peotone, Ill., manufacturers of steel pails and drums, was announced last month by S. A. Bennett, president. The Passano company, a distributor of chemical raw materials and equipment, will represent Bennett in Alabama, Mississippi, Louisiana, Georgia and Florida. Stocks of Bennett pails are now carried in Miami and Tampa, Fla., for less than carload buyers and warehouse stocks are planned for Atlanta and New Orleans in the near future.

A. J. Passano



Fluid Lists Facilities

Fluid Chemical Co., Newark, N.J., recently announced publication of a facilities catalog. In the generously illustrated catalog Fluid describes all facilities and services in the contract packaging and aerosol filling fields, which it is in position to offer its customers.

— ★ —

New Aerosol Can Labeler

The development of the "New Way" aerosol can labeler was announced recently by Chisholm-Ryder Company of Pennsylvania, Hanover, Pa. Similar to its model V4 can labeler, the new unit can handle cans made by American Can Co., Crown Can and Continental Can Co. When equipped with quick change features the machine can be used for handling these cans with both right hand or left hand labels. The unit can also be equipped with a continuous label feed and feeding elevator which can be operated with any necessary can twisters for use on practically any aerosol line.

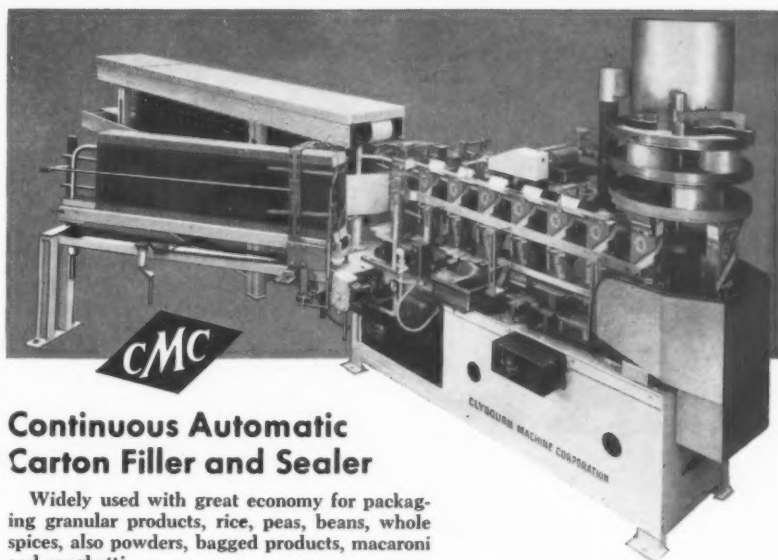
— ★ —

Bixler Heads Crown Div.

Stanley M. Bixler has been appointed general manager of the Western division of Crown Cork & Seal Co., Baltimore, it was announced last month by Russell Gowan, president. Edmund B. Spread, who served as acting general manager, becomes assistant general manager.

The company's Western division with headquarters in San

Stanley M. Bixler

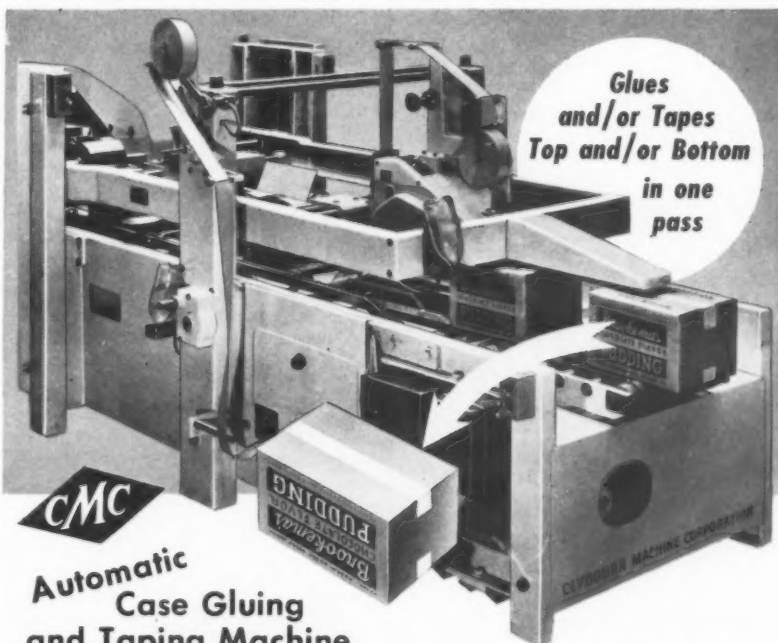


Continuous Automatic Carton Filler and Sealer

Widely used with great economy for packaging granular products, rice, peas, beans, whole spices, also powders, bagged products, macaroni and spaghetti.

Measures by volume, net weigher, or auger feed. Quickly adjusted for different carton sizes. Available in four different models.

Tell us what you want to pack or send for literature.



Automatic Case Gluing and Taping Machine

Seals automatically the way you want the job done.

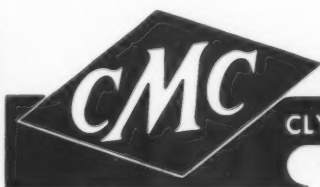
Glues entire flaps or part of them, top and/or bottom; also tapes top and/or bottom in the same pass.

Carton size change in one minute. Many other important features.

New model for Taping only.

Can be used as an independent Taping machine or attached to any case sealer for full automatic taping operation.

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Francisco includes two plants located in San Francisco and Los Angeles, respectively. The division handles the sale of Crown cans, closures, bottle crowns, and bottling and filling machinery, in a nine state area covering California, Oregon, Washington, Nevada, Utah, New Mexico, Idaho, Arizona, and western Texas plus the territories of Alaska and Hawaii.

New "Packomatic" Folder

A new four-page illustrated folder describing "Packomatic" bale sealer was issued recently by J. L.

Ferguson Co., Joliet, Ill. The bulletin illustrates the operation of the device which automatically folds, glues, seals, and compresses kraft paper bales up to 100 pounds in weight. Technical and engineering data are included.

New Aerosol Lab Units

Two new laboratory units for experimental production of pressure-packed units were announced recently by Builders Sheet Metal Works, 108 Wooster St., New York. One unit is a device for holding laboratory propellant

bottles and the other is an acetone-dry ice cooler for cold filling pressure-packed containers.

Tank rack No. 1866 is a device for holding bottled propellants in the laboratory. A solid angle iron frame holds a revolving rack, in which the bottled propellant is placed. This unit can be made to hold any size tank of propellant or CO₂. The bottle can be easily inverted for use by one man and the entire unit is mounted on casters for easy mobility.

The acetone-dry ice unit consists of two interwoven copper coils immersed in acetone. The outer container and cover are made of stainless steel. The acetone is chilled by dry ice pellets, manufactured by means of a "Snow Man" dry ice machine. The propellant is then circulated through the copper coils and brought to a temperature of -40°F. The chilled propellant is placed in the container to be pressure-packed and the container is capped. The interwoven coils allow two different types of propellants to be chilled at the same time.

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10-12 and 15
gallons**

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Many buyers find Vulcan's prompt delivery helps them keep container inventories at a minimum . . . no need to keep big stocks of containers on hand to meet production schedules. They order containers when needed . . . *in any quantity*. Vulcan gets them there in time!

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Representatives in all Principal Cities



NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of \$25 must accompany notice of opposition.

Dehydol—This for washing, wetting, dispersing, foaming, and emulsifying agents. Filed Sept. 21, 1955 by Dehydag Deutsche Hydrierwerke GmbH, Dusseldorf, Germany. Claims use since June 1952, and in commerce since Apr. 30, 1954.

KDS-3—This for liquid detergent sanitizer. Filed Oct. 3, 1955 by Klenzade Products, Inc., Beloit, Wisc. Claims use since Sept. 19, 1955.

Oven Show—This for cleaner for ovens. Filed Oct. 18, 1955 by R. M. Hollingshead Corp., Camden, N. J. Claims use since Aug. 9, 1955.

Persulan—This for hair shampoo. Filed Oct. 21, 1955 by Morris S. Plotkin, Highland Park, Mich. Claims use since 1950.

Stanzol—This for floor sealer, floor wax, dance floor wax, floor oil, floor dressing, preparation for treating dust mops. Filed Sept. 29, 1955 by H. V. Smith Co., St. Paul, Minn. Claims use since on or about Jan. 1, 1933.

Deep Gloss—This for polishing preparation for metal and wood surfaces. Filed Jan. 26, 1956 by S. C. Johnson & Son, Inc., Racine, Wisc. Claims use since Oct. 29, 1953.

Vita-San—This for fungicidal solution for treating leather and fabric. Filed Oct. 7, 1954 by United Finish Co., Peabody, Mass., assigned to the Blumberg Co., Peabody. Claims use since Aug. 15, 1951.

Acco—This for plant bactericide, fungicide and insecticide. Filed Mar. 15, 1955 by American Cyanamid Co., New York. Claims use since Mar. 9, 1955.

Raid—This for insecticide. Filed May 23, 1955 by S. C. Johnson & Son, Inc., Racine, Wisc. Claims use since Feb. 23, 1955.

Black Leaf—This for pesticides. Filed July 8, 1955 by Diamond Black Leaf Co., Cleveland. Claims use since Apr. 12, 1955.

Dura-wood—This for wood preservative. Filed July 26, 1955 by Darworth, Inc., Simsbury, Conn. Claims use since Jan. 12, 1955.

Nice—This for room deodorant and air sanitizers. Filed July 27, 1955 by A-M-R Chemical Co., Brooklyn, N. Y. Claims use since Jan. 12, 1955.

Sir Boss—This for brushless shave cream. Filed Apr. 25, 1955 by

Weseg Corp., San Francisco. Claims use since Apr. 18, 1955.

Who's Who—This for shaving cream. Filed Aug. 10, 1955 by Les Parfums de Dana, Inc., New York. Claims use since July 26, 1955.

Wink—This for hand soaps, flaked and powdered soaps for laundry, and liquid detergents for washing dishes. Filed Aug. 3, 1953 by Wink Soap Co., Racine, Wisc. Claims use since 1919.

Rep—This for concentrated, liquid synthetic detergent for industrial, institutional, commercial and household use. Filed July 14, 1955 by J. I. Holcomb Mfg. Co., Indianapolis. Claims use since May 2, 1955.

A Friend To The Finish—This for automobile polish. Filed Oct. 1, 1953 by Karseal Corp., Hollywood, Calif. Claims use since Sept. 13, 1946.

Brushless Scuff-Kote—This for liquid shoe polish. Filed Oct. 12, 1953 by Knomark Mfg. Co., Brooklyn, N. Y. Claims use since Feb. 15, 1952; and since June, 1946 as to "Scuff-Kote."

Wipe-Easy—This for car wax. Filed Dec. 9, 1954 by Murray Borowitz, New York. Claims use since Nov. 20, 1954.

Thrifty Spray Shine—This for leather preservative. Filed Aug. 17, 1954 by Continental Ventures, Inc., Detroit. Claims use since Apr. 15, 1954.

Ratopax—This for preparation for exterminating rats, mice and other rodents. Filed Feb. 18, 1955 by Biocerta Corp., New York. Claims use since May 1, 1959.

Fly-Charmer—This for insecticides. Filed Mar. 1, 1955 by Pittsburgh Coke & Chemical Co., Pittsburgh. Claims use since Jan. 31, 1955.

Cheelox—This for water-softening ion-sequestering agent. Filed May 16, 1955 by General Aniline & Film Corp., New York. Claims use since Apr. 13, 1955.

Push Button—This for insecticides. Filed May 25, 1955 by McConnon & Co., Winona, Minn. Claims use since Feb. 1, 1955.

Sucrocid—This for insecticides in powder form for fly control in and around farm buildings. Filed June 1, 1955 by Eastern States Farmers' Exchange, Inc., W. Springfield, Mass. Claims use since Apr. 29, 1955.

Crest—This for laundry starch. Filed Aug. 3, 1955 by A. E. Staley Mfg. Co., Decatur, Ill. Claims use since July 21, 1955.

Fresh-ettes—This for absorbent body impregnated with a perfumed air deodorant. Filed Aug. 15, 1955 by Fresh-Ettes Corp., Dallas. Claims use since Feb. 1, 1955.

IBBCO—This for liquid floor cleaners, and liquid and solid soaps for industrial and institutional use. Filed Mar. 3, 1955 by Indianapolis Brush & Broom Mfg. Co., Indianapolis. Claims use since Dec. 9, 1954.

Solve—This for pine oil soap jelly. Filed Mar. 18, 1955 by Harold

F. Williams, New Bedford, Mass. Claims use since on or about December 1953.

twin detergent, super Ezoll—These for soap powders. Filed May 6, 1955 by Gillam Soaps & Chemicals, Inc., Fort Worth, Texas. Claims use since Feb. 1, 1954, and Apr. 10, 1954, respectively.

Comet—This for sudsing cleaner, cleanser, and detergent. Filed June 16, 1955 by Procter & Gamble Co., Cincinnati. Claims use since November 1911.

Poli-wax—This for cleaner, wax, and polish. Filed Oct. 14, 1955 by Western Auto Supply Co., Kansas City, Mo. Claims use since Feb. 27, 1939.

Win-Tone—This for liquid floor-cleaning and polishing preparation. Filed Oct. 17, 1955 by Windsor Wax Co., Hoboken, N. J. Claims use since June 2, 1953.

ful-scat—This for insect repellent. Filed Apr. 22, 1955 by Fuller Brush Co., Hartford, Conn. Claims use since on or about Aug. 11, 1954.

Scotch-em—This for aerosol insecticide. Filed May 24, 1955 by Pennsylvania Salt Mfg. Co., Philadelphia. Claims use since Feb. 18, 1955.

Halco—This for wetting agents, defoaming agents, softeners. Filed May 25, 1955 by C. P. Hall Co., Akron, O. Claims use since Feb. 9, 1951.

Ultramid L—This for surface active agents used as detergents, detergent additives, wetting agents, emulsifiers, and dispersing agents. Filed June 30, 1955 by Ultra Chemical Works, Inc., Paterson, N. J. Claims use since May 26, 1955.

Preferred Stock—This for shaving cream. Filed Feb. 10, 1955 by Coty, Inc., New York City. Claims use since Dec. 10, 1954.

Very—This for dentifrices. Filed Aug. 23, 1955 by Carter Products, Inc., New York City. Claims use since July 13, 1955.

Copadent—This for toothpaste. Filed Sept. 14, 1955 by Copa Products, Inc., Beverly Hills, Calif. Claims use since July 12, 1955.

Tintabit—This for shampoo tint. Filed Sept. 13, 1954 by Clairol Inc., New York City. Claims use since Mar. 20, 1947.

D H—This for shampoo. Filed Nov. 8, 1955 by Gillette Co., Boston. Claims use since Oct. 18, 1955.

Spra-Tainer—This for cans for discharging contents under pressure. Filed Aug. 23, 1955 by Crown Cork & Seal Co., Baltimore. Claims use since Jan. 10, 1949.

Pest-O-Lite, Bug - O - Lite—These for candles containing insect repellent. Filed June 7, 1955 by Muench-Kreuzer Candle Co., Syracuse, N. Y. Claims use since May 31, 1955, and May 11, 1955, respectively.

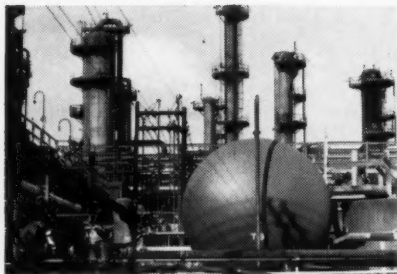
Questex—This for sequestering or chelating agents useful as water softeners and treating agents, rust and scale removers. Filed Aug. 25, 1955 by Victor Chemical Works, Chicago. Claims use since Feb. 17, 1955.

Lustre-N-Dure—This for hard gloss protective-type floor wax. Filed Aug. 9, 1955 by Sherwin-Williams Co., Cleveland. Claims use since Apr. 5, 1955.

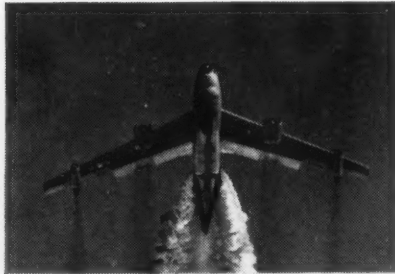
The challenge of integrity

A reputation for integrity—daily challenged and daily put to test—is established only through years of proven performance. Pennsalt's 106-year history of supplying top-quality products and service to industries depending upon close control of quality has met the challenge and established the reputation.

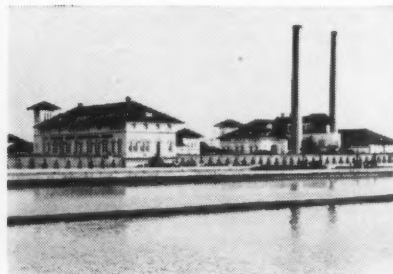
On the opposite page are details about Pennsalt's new ISOTRONS—the latest word in fluorinated aerosol propellents. The aerosol industry can depend upon the integrity of Pennsalt to stand behind the ISOTRONS for quality, uniformity, performance, and value.



PETROLEUM REFINING calls for the utmost precision in raw-materials supply and processing. Pennsalt chemicals meet industry's rigid standards of purity and uniformity.



HIGH ALTITUDE FLIGHT relies on Pennsalt fluorine and chlorine trifluoride to provide the exact oxidizing power for blazing rocket fuels.



HUMAN LIVES AND HEALTH depend on the purity of drinking water. Municipal water systems throughout the country use Pennsalt chlorine for purification.



ISOTRON

THE LATEST WORD IN FLUORINATED PROPELLENTS

Pennsalt—a pioneer in modern fluorine chemistry—proudly announces the ISOTRON* line of aerosol propellents, soon available in commercial quantities from a new Pennsalt plant now being built at Calvert City, Kentucky. Of highest quality, competitively priced, and COMPLETELY INTERCHANGEABLE with other fluorinated propellents, ISOTRON products are geared to the rapidly increasing demands of this industry.

The new ISOTRON line will include ISOTRON 11, ISOTRON 12, and ISOTRON 114—backbones of the fluorinated propellant field. They're of precisely the same formulas as other products of this kind, and they'll be manufactured with the rigid quality control you expect of Pennsalt. Optimum

quality and uniformity are assured.

IF YOU MAKE OR PLAN TO MAKE a liquid, semi-solid, or powdered product for mass consumption, investigate the advantages of ISOTRONS. Benefit from Pennsalt's pioneering research and progressive thinking in new propellents and new finished products for aerosol packaging. Pennsalt offers you well-staffed sales-service laboratories, and specialists who are eager to help you explore new fields of aerosol packaging. Learn all the facts about ISOTRON propellents—write Technical Services Dept. 324, Industrial Chemicals Division, Pennsylvania Salt Manufacturing Company, Three Penn Center Plaza, Philadelphia 2, Pa.

*ISOTRON IS A TRADEMARK OF THE PENNSYLVANIA SALT MFG. COMPANY



PRESSURE LOADING WITH

Pres-O

"MECHANIZING the AEROSOL"

is the title of an interesting and informative article which appeared in MODERN PACKAGING for January '56.



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is favorably known
the world over.



The PACKAGE LOADING



at speeds up to 120 per minute, is by the Pres-O Combination Automatic Feeder, Crimper and Propellant Filler. This Pres-O machine utilizes all the propellant and operates without need of refrigeration.

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serve in dispensing many of the world's best known pressurized packaged products — foam and liquid. We have or can design the valve you need to help make your products preferred.

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PRESSURE PACKAGING

AEROSOL production up another 30 per cent in 1955 for a new record of 240 million units for one year's output . . . bringing the total production of aerosols for civilian markets in nine years to slightly more than three-quarters of a billion containers, with the billionth unit slated to roll off the assembly line early next fall.

That's the doctor's report on the health of the aerosol market and, while not wholly unexpected, it warmed the hearts, whetted the hopes, and set new goals for component manufacturers, loaders, and marketers attending the aerosol division meetings at CSMA's 42nd mid-year get-together in Chicago last month. Put together by Fred Lodes' hard-working committee, which has conducted a confidential industry survey for the association for the last five years, the report blanketed the aerosol group's two days of open meetings with an aura of optimism . . . set the stage for a series of technical papers and a forum discussion on business forecasting that indicated aerosol marketers are looking ahead, appreciative of, but not content with, the glories of the past.

Because you'll find them elsewhere in this issue, we won't dig into the details of the 1955 CSMA aerosol survey. But we would like to recap some of the highlights.

Insecticides retained a slim lead among the hundred different non-food product types as the biggest volume item turned out in 1955. Bug killers, including space and residual sprays and moth preventives, accounted for nearly 56 million units, about 23.3 per cent of the aerosol total. Hot on their collective necks were hair net sprays, topping 53.7 million units.

Aerosol shave lathers were turned out to the tune of 45.4 mil-

lion units last year, up 7.3 per cent over 1954, according to the CSMA study, while room deodorants, at 32.1 million units, chalked up the healthiest growth—a whopping 86.7 per cent growth since 1954.

Other 1955 survey figures by product classifications:

Miscellaneous personal products, including shampoos, perfumes, colognes, personal deodorants, sun tan oils, and hand lotions—14.2 million units.

Pigmented and metallic paints—7.7 million units.

Artificial snow—6.8 million units.

Miscellaneous products, including pet sprays, mildew preventives, lubricants, ignition sprays, and anti-statics—9.6 million units.

General household products, including waxes, oven and other cleaners, insect and water repellents, rug shampoos, etc.—6.2 million units.

Fire extinguishers—1.9 million units.

Estimated dollar value of 1955 aerosol products . . . about \$250 million. The association feels the survey results are pretty close to actual aerosol production . . . cites separate survey reports of 257 million aerosol containers and 245 million aerosol valves produced during the year as corroborative evidence of accuracy.

However, failing to report their 1955 production were some big names in the aerosol shave cream business—firms like Mennen, Shulton, and Barbasol. Although many are small, 49 of the 116 companies polled by CSMA failed to contribute figures to the 1955 survey.

In coming up with their overall figure of 240 million packages for 1955, Mr. Lodes' committee allowed only 3.2 million contain-

ers to cover estimated production of non-reporting firms. We wonder if that was enough.

SPEAKING of production figures, Helene Curtis Industries packed their 50 millionth package of Spray Net last month . . . celebrated the occasion by actually gold plating the milestone package. As part of the celebration, we hear, they've included a few random gold colored containers of Spray Net in cartons of the product going to beauty shop customers on regular orders. Lucky people who found one of the gold colored containers could exchange them for either a mink coat or a vacation trip around the world.

FROM a marketer's standpoint, one of the most valuable portions of the two-day CSMA aerosol session was a panel discussion on forecasting, moderated by T. D. Johnson, aerosol sales manager for the Du Pont Company's Kinetic Chemicals Division. Sitting in with him to give the views of suppliers and marketers were Phil Sagarin, Valve Corporation of America; Harvey Tull, Can Division of Crown Cork and Seal; Douglas Atlas, G. Barr & Co., William Machmer, General Chemical Division of Allied Chemical and Dye Corp.; Robert Davidson, Colgate-Palmolive Co.; and Robert Williams, Audit and Survey Corp.

Consensus of the panel: Sound production and sales forecasting is a "must" for all interested in aerosols, if the business is to grow steadily and profitably. Depending upon the size of the business unit, forecasting can be a complicated, pretty scientific venture with specially trained personnel devoting full time to market studies and interpretation, or it can be a part-time job for the head man in a small organization who periodically sits down and quietly reviews his past performance, and, mentally charts the course he thinks his business will and can take in the next year.

With so many components to

consider in turning out a finished aerosol package these days, you can't operate just day to day, foresee today where you might be and what you'll need in the way of supplies, personnel and capital six months, a year, or several years, from now.

Although speaking from the standpoint of a propellant manufacturer, W. L. Machmer, Jr., market survey manager for General Chemical Division of Allied Chemical and Dye, put the need in a nutshell when he said:

"Unless increases in demand are accurately forecast and plant expansions made well in advance of rising demands, shortages could occur and the marketing programs of many companies would suffer."

Plant expansion can't be accomplished overnight, Mr. Machmer pointed out, citing propellant manufacturers' experience that a year, or even two years, might be required to engineer, procure materials, construct, and bring necessary facilities into production. Long range forecasting has enabled propellant manufacturers to provide ample plant capacity to satisfy the most optimistic long term requirements for aerosol propellants, he emphasized.

On potential growth of aerosols, incidentally, Mr. Machmer observed, "We go along with the estimates of 500-600 million unit aerosol sales by 1960." That's more than double the 1955 record . . . offers forecasters and engineers a choice nugget to toy with from a production standpoint and provides product development and sales with a challenge that leaves little time for relaxing.

Only panelist who seemed to take a possible different view of the need for concentration on the forecaster's crystal ball was Doug Atlas of G. Barr & Co., one of the nation's biggest contract loaders. About all the loader can do, observed Atlas, is to keep his plant and plans versatile enough to permit him to jump in and fill the loading demand as it arises. At first blush, Atlas would

appear to be "pooh-poohing" the need for long term forecasting and embracing the "live day to day" idea. At the risk of misinterpreting his remarks, we take that with "tongue in cheek" . . . will bet that Barr and most other loaders have their planning eyes focused just as far in the future as anyone else.

WINSTON H. Reed of Aerosol Process, Inc., Bridgeport, Conn., discussed a new propellant blend composed of fluorinated hydrocarbons and isobutane. Because his paper was reprinted in full in May *SOAP*, we'll not go into detail here but limit our remarks to these brief comments about the propellant he suggested:

Advantage: Lower overall propellant cost, inasmuch as isobutane costs less than dichlorodifluoromethane (Du Pont's "Freon-12" and General Chemical's "Genetron-12"). Disadvantage: unlike the fluorinated hydrocarbons, isobutane is flammable and explosive, requires special handling in loading and careful formulation to avoid excessive flammability in the finished aerosol product.

What it amounts to is substituting a lower priced gas for at least part of the propellant mix in the product. Best guess, figuring on keeping the proportion of fluorinated hydrocarbons high enough to "quench" flammability of the isobutane, is that the blend might result in a six per cent saving in propellant share of the product cost to the manufacturer. We understand only one aerosol manufacturer currently is using the blend.

Reed cautioned the aerosol division that the suggested blend must be designed carefully to submerge the hydrocarbon properties with the fluorinated hydrocarbon properties to control flammability.

SIDNEY Katz of Chicago's Armour Research Foundation presented new ideas on particle size determination, and Herbert Kainik of Dodge & Olcott, Inc., offered the latest information on stability and

behavior of perfume oils in aerosols. Too technical for coverage in this brief space but you'll be seeing more on these papers in the future issues of *SOAP*. We're just hitting the high spots here.

ICC regulations on shipment of aerosols—of importance to anyone moving goods for sale in interstate commerce—came in for a heavy share of attention on the aerosol division program . . . with the latest word "straight from the horse's mouth." Speaking formally before the entire aerosol division, Bureau of Explosives' chief inspector, Harry Campbell, outlined the current picture on the ICC regulations . . . quietly warned aerosol marketers that they suspected all was not "up to snuff" so far as adherence to shipping regulations is concerned.

Inspectors have been going out to aerosol plants recently to check first-hand on loaders' practices in testing finished aerosols under 130°F., temperature required on every package to be shipped in interstate commerce. Some serious infractions were uncovered, Mr. Campbell said. In one plant the loader checked his water bath temperature simply by rolling up his sleeve and dunking his elbow periodically in the water rather than using a thermometer or thermostatic control . . . the temperature was found to be "considerably below" the 130° requirement and ICC cracked down.

Another loader, Mr. Campbell said, adamantly refused to submit samples of the product he was loading to the Bureau of Explosives inspector on the grounds that the product was the property of his customer. Threat of an embargo on all shipments from the plant convinced the loader to accede to the inspector's legitimate request for samples for analysis.

ICC has the power to enforce such requests, finds it hard, as we do, to understand why loaders and marketers don't adhere

(Turn to Page 171)

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WHEN TO USE

HOW TO USE

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For the consumer, the properties you can enhance in no-rub polishes with Durez phenolic resins are impressive indeed. But from the manufacturer's standpoint, the stabilizing influence of these resins on product cost is of major importance too. With other materials in your formulations subject to fluctuating market conditions, the resin helps to keep costs in line.

Whether your product is based on vegetable waxes or the newer synthetic materials, there is a Durez resin to fit the job. We'll be glad to send you technical data and consult with you on formulations and the control of properties with resin.

HIGH MELT. Most widely used, Durez 219 resin (135°C.) is emulsifiable and compatible with vegetable, mineral, and synthetic waxes. Durez 225, with a higher melting point, produces even harder, more tack-free films. It can be used to particular advantage with the newer synthetic waxes.

LOW MELT. Durez resins of the high-melt types are furnished in modified form with a melting point suitable for processing in steam-jacketed kettles. If you use this type of equipment, ask about Durez 13560 and 14140, which melt at about 60° C.

LEVELING. Excellent "lay-down" is obtained by using Durez 15546 alkali-soluble resin in no-rub emulsion polishes. Recommended concentrations of this high-melt resin in emulsions based on vegetable, mineral or synthetic waxes also improve water-resistance and hardness.



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CHEMICALS
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HOW TO STAR

YOUR PRODUCTS

AS AEROSOLS



These Contract To The

Even slow-moving products have been reborn as best sellers when packaged as aerosols. The push-button convenience of modern pressure packaging, and its elimination of loss from evaporation, spillage, and breakage have proved tremendous sales advantages. With production of aerosols now approaching 200,000,000 units yearly, a gain of nearly 4000% in ten years, it's time for even the conservatively minded to start using this appealing new packaging technique.

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Nothing in merchandising could be simpler than giving your products the sales advantages of aerosol packaging. If they can be sprayed, brushed on, dusted or daubed, see any of the Contract Fillers listed here. They have the facilities and skills to take over the entire packaging job—whether you want a small test run or volume production. You won't have to invest a penny in plant or personnel.

Specialization by the Contract Filler makes possible economies you might need months or years to achieve. He has the accumulated experience to guide you in obtaining the right containers, valves and formulations. Call on his help now... he is your short-cut to the booming aerosol market.

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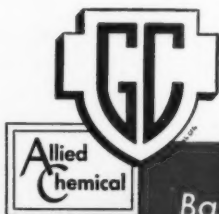
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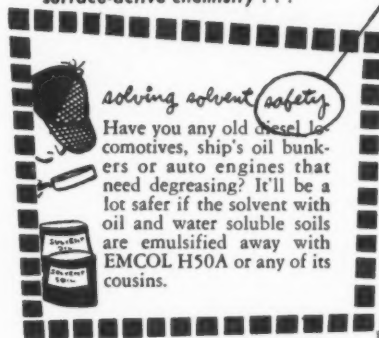
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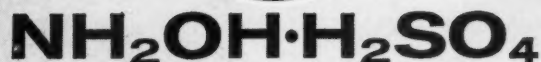
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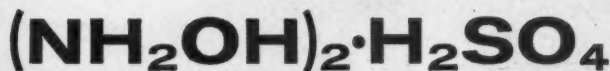


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Melting point	Indefinite	177d	152d
pH of 0.1 M aqueous solution	1.6	3.7	3.4
Solubility g/100 g			
In water 25°C	390 approx.	63.9	94.7
In 95% Ethanol	4.3	0.2	10.5
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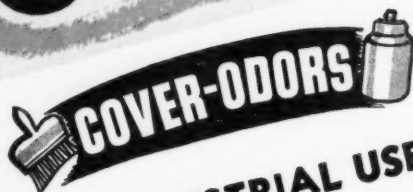


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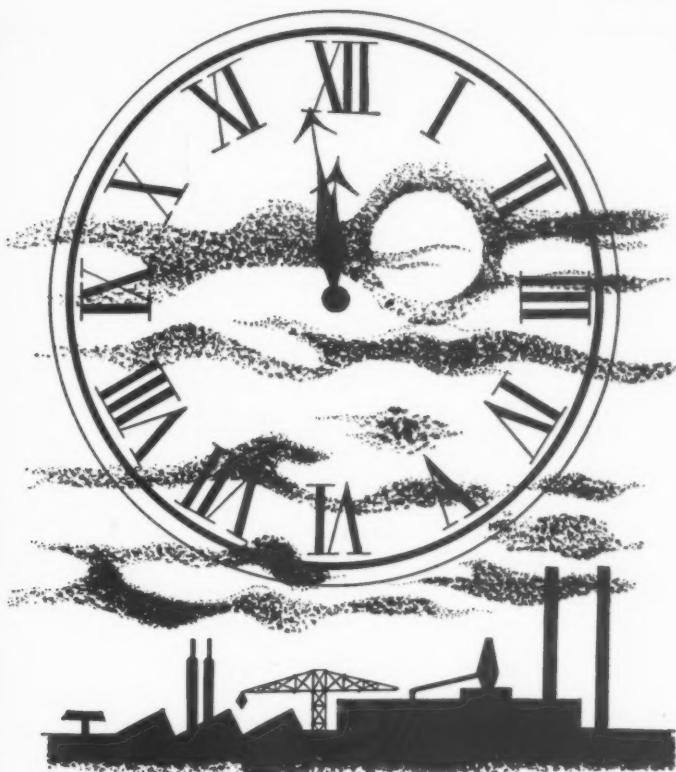
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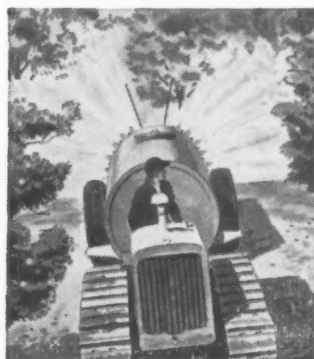
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Poultry Houses

Chocolate Manufacturers

Feed Stuff Plants

Packing Houses

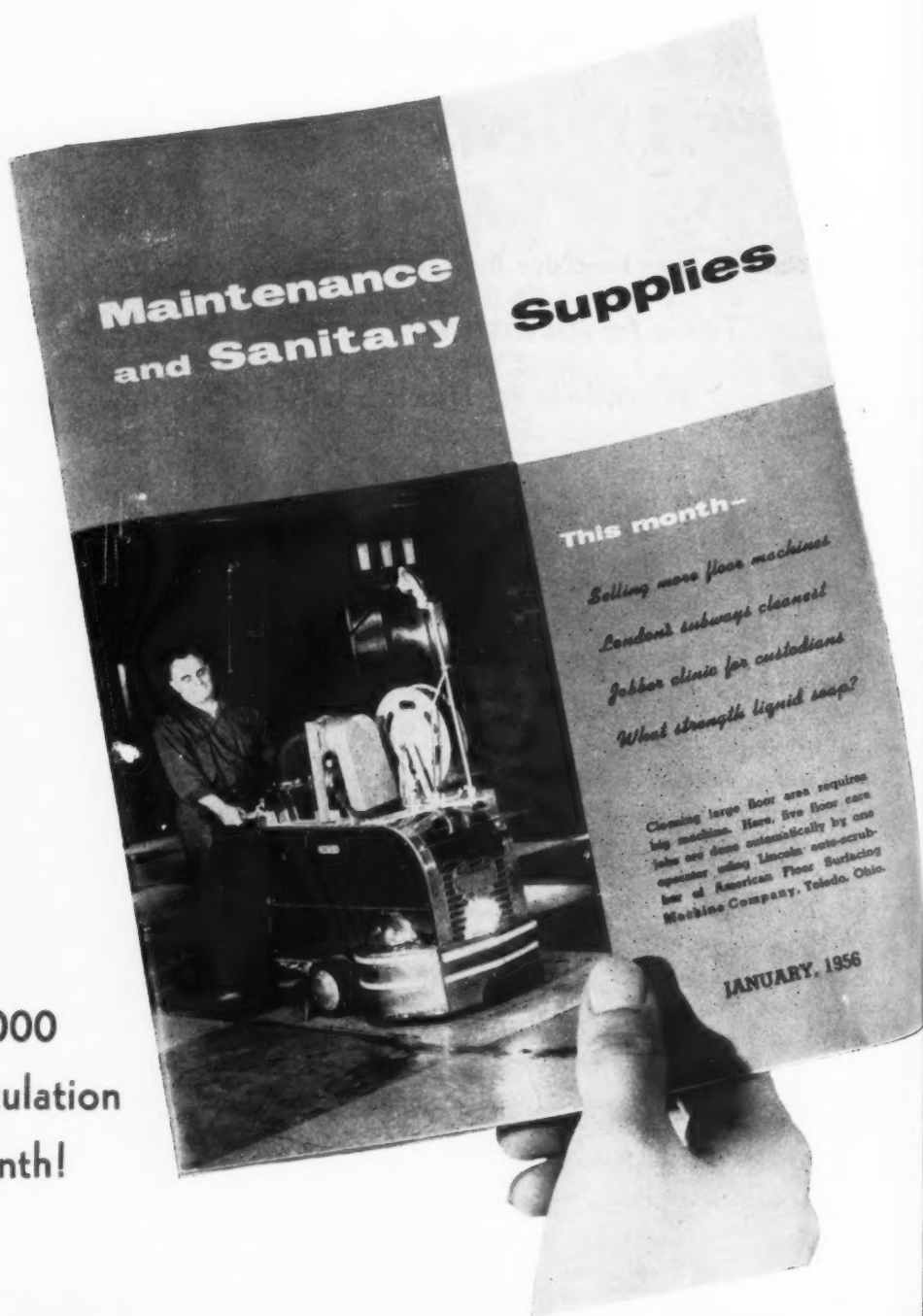
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Surveys Highlight CSMA Meeting

TWO full days of meetings of the six divisions of which the association is composed and a general session were attended by a near record number during the 42nd midyear meeting of the Chemical Specialties Manufacturers Association at the Drake Hotel, Chicago, May 21 and 22. Official registration for the meeting was put at 752.

Highlights of the program included reports of surveys for aerosols, insecticides and brake fluids. Papers covering new developments in specialties or raw materials were also presented.

In addition to reports of the association officers and its legal counsel, other official business transacted at the meeting included the election of administrative committees of the six divisions of the association and the appointment of a nominating committee to present a slate of officers and directors for the election to take place during the 43rd annual meeting at the Mayflower Hotel, Washington, D. C., next Dec. 3, 4 and 5.

Divisional administrative committees elected at the midyear meeting to take office following the annual meeting in December included:

Aerosol: Chairman, Charles E. Beach, John C. Stalford & Sons, Inc., Baltimore, reelected; vice-chairman, E. J. McKernan, Seaquist Manufacturing Corp., Cary, Ill.; Arthur M. Adler, Helene Curtis Industries, Inc., Chicago, reelected; William T. Egan, Colgate-Palmolive Co., New York; J. G. Ellis, Sprayon Products Co., Cleveland.

Automotive: Chairman, Harold G. Lederer, R. M. Hollingshead Corp., Camden, N. J., reelected; vice-chairman, A. James Coulter, Gulf Oil Corp., Pittsburgh, reelected; C. E. Alderdice, Jr., Bell Co., Chicago; R. J. Holzinger, Socony-Vacuum Oil Co., Brooklyn; C. A. Weslager, Fabrics & Finishes Department, E. I. du Pont de Nemours & Co., Wilmington, all reelected.

Disinfectants and Sanitizers: Chairman, A. G. Bowers, Hunt Manufacturing Co., Cleveland, reelected; Irving Gaines, Onyx Oil & Chemical Co.,

Jersey City, N. J., reelected; A. Haldane Gee, Foster D. Snell, Inc., New York, reelected; F. R. Geib, Dow Chemical Co., Midland, Mich.; Mrs. E. S. Wright, Lehn & Fink Products Corp., Bloomfield, N. J., reelected.

Insecticide: Chairman, Carlos Kampmeier, Rohm & Haas Co., Philadelphia, reelected; vice-chairman, John A. Rodda, Fairfield Chemical Division, Food Machinery & Chemical Corp., Baltimore, reelected; George W. Fiero, Esso Standard Oil Co., New York; Joseph E. Lee, McLaughlin Gormley King Co., Minneapolis; T. R. Metzger, Continental Can Co., Chicago, all reelected.

Soap, Detergents and Sanitary Chemical Products: Chairman, Clarence L. Weirich, C. B. Dolge Co., Westport, Conn.; vice-chairman, W. S. Jessop, U. S. Sanitary Specialties Corp., Chicago; James M. Cloney, General Aniline & Film Corp., New York, reelected; Robert C. Ferris, Purex Corp., Ltd., South Gate, Calif.; R. K. Rigger, Wyandotte Chemicals Corp., Wyandotte, Mich.

Waxes and Floor Finishes: Chairman, H. J. Mellan, Durez Plastics Division, Hooker Electrochemical Co., North Tonawanda, N. Y., reelected;

vice-chairman, Donald B. Peck, Fuller Brush Co., Hartford, Conn., reelected; Earl Brenn, Huntington Laboratories, Inc., Huntington, Ind.; Joseph Green, Oil Specialties & Refining Co., Brooklyn, reelected; G. A. Isenman, Beacon Co., Cambridge, Mass.

Aerosol Panel

A panel discussion on "Forecasting in the Aerosol Business," one of the main features of the Aerosol Division meeting the morning of May 21, was presided over by T. D. Johnson, Jr., manager of aerosol propellant sales for the Kinetic Chemicals Division of du Pont. Participating were P. H. Sagarin, VCA, Inc., Bridgeport, Conn., valve manufacturer; Douglas Atlas, G. Barr & Co., Chicago, aerosol loader; W. L. Machmer, Jr., manager, market surveys, General Chemical Division, Allied Chemical & Dye

In recognition of its 30 years as official publication of the Chemical Specialties Manufacturers Assn., MacNair-Dorland Co., publishers of Soap & Chemical Specialties received an illuminated scroll from Dr. E. G. Klarmann, vice-president of Lehn & Fink Products Corp., and president of CSMA. The presentation took place at the group luncheon, May 21. Holding the scroll is Dr. Klarmann. To his right is Grant A. Dorland, vice-president and treasurer of MacNair-Dorland Co., and Ira P. MacNair, president of the firm, is at Dr. Klarmann's left. Mr. MacNair has been active in the affairs of CSMA since 1925, and served from 1941 through 1946 as voluntary secretary of the association, of which he is now a member of the board of governors. Grant Dorland, similarly has been active for many years in the association, and has served as chairman of the entertainment and publicity committees.



Left to right, top to bottom: W. J. Pickett, Pennsylvania Salt Mfg. Co.; R. H. Young, Davies-Young Soap Co.; C. S. Kimball, F. D. Snell, Inc.; T. Kritchevsky, Ninol Laboratories, Inc.; A. C. Stepan, Stepan Chemical Co.; H. L. Sanders, Ninol. C. Clapp, Western Filling Corp.; J. J. Gregory, Chase Products Co.; P. J. Hopkins, Airkem, Inc.; M. Bader, Olin-Mathieson Chemical Corp.; S. Epstein, Emulsol Chemical Corp.; H. W. Zussman, Geigy Chemical Corp. A. Wiener, Standard Naphthalene Products Co.; T. Morgan, Soap & Chemical Specialties; C. Poderzay, Standard Naphthalene; B. Young, Wax & Rosin Products Co.; C. S. Treacy, M. Argueso & Co.; M. Fuld, Fuld Brothers, Inc.; P. Hoglund, Du Pont. W. F. Moburg, Dr. O. F. Hedenburg, Rex Research Corp.; N. J. Gothard, Sinclair Refining Co.; John Rodda, Fairfield Chemical Div.; C. R. Morrison, Federal Varnish; C. Carter, Continental Filling Corp.; H. R. Shepherd, Aero-Sol Techniques, Inc.; R. Lockhart, Candy & Co. J. J. Wilson, Kalusoff, Ltd.; W. I. Crissman and G. Hartz, John Powell & Co., Div., Olin-Mathieson; A. Budner, S. C. Johnson & Son, Inc.; J. B. Snider, General Services Administration; V. Steinle, Johnson. M. G. Sutton, West Disinfecting Co.; H. Schmidt and A. F. Bohnert, Federal Varnish; G. E. Doerr, Federal Varnish; C. A. Gerardi, U. S. Testing Co.; R. R. Rich, West Disinfecting Co.





Left to right, top to bottom: L. M. Argueso, Jr.; L. M. Argueso, Sr., and P. G. Argueso, M. Argueso & Co.; J. R. Kaestner, Acme, Chemical Co.; D. Hatcher, Stepan Chemical Co.; J. Kritchevsky, Ninol Laboratories, Inc. C. E. Beach, John C. Stallort & Sons, Inc.; H. A. Campbell, Bureau of Explosives; H. E. Peterson, Peterson Filling & Packaging Co.; J. W. Brampton, Krylon, Inc.; G. C. Gilroy, Precision Valve Corp.; G. J. Flanagan, Federal Varnish. Dr. W. O. Haberman, Ralston Purina Co.; A. L. Saeks and N. E. Wilson, Puro Co.; J. Powell, Modern Sanitation magazine; M. Lemmermeyer, Aromatic Products, Inc.; J. Conner, CSMA legal counsel; D. H. Terry, Bon Ami Co. Mrs. E. McIntyre, Chicago convention bureau; D. Begley, Reilly Tar & Chemical Co.; A. K. Mulliken, CSMA asst. secretary; Mrs. E. D. Sullivan, CSMA executive secretary; C. W. Furst, Furst-McNess Co.; R. W. Svendsen and J. J. Gregory, Chase Products Co. R. E. Horsey and R. E. Vicklund, Givaudan-Delawanna, Inc.; W. F. Pollnow and A. Baker, Vestal, Inc.; G. A. Piper, D. C. McSorley and M. J. Hefernan, Du Pont. W. H. Joy, American Telephone & Telegraph Co.; C. L. Weirich and K. A. Dolge, C. B. Dolge Co.; L. E. Kneeland, American Can Co.; A. R. Jensen, Magnus, Mabree & Reynard; C. Pacifico, American Alcolac Corp.; F. G. Calkin, Tennessee Eastman Co. A. C. Stepan, Stepan Chemical Co.; J. I. Antonetti and L. Powell, Jewel Tea Co.; K. B. Nash, W. I. Crissman and G. Hartz, John Powell & Co. Div., Olin-Mathieson Chemical Corp.



At the speakers table: (left to right) Gottfried Kindermann, Research Associate, Center for Study of American Foreign Policy, University of Chicago, Tuesday, May 22, luncheon speaker; James E. Ferris, Niagara Alkali Division, Hooker

Electrochemical Co., 1st vice-president, CSMA, and Elmer Layden, General American Transportation Corp., and former All-American football player who starred as a fullback on the "Four Horsemen" of Notre Dame, luncheon speaker May 21.

Corp., New York, propellant supplier and Harvey Tull, Crown Can Division, Crown Cork & Seal Co., Philadelphia.

The panel was preceded by the address of the division chairman, Charles E. Beach of John C. Stalford & Sons, Baltimore, who pointed out that aerosols are "still very much in the planning stage." "True, some products we have on the market cannot be classified in this category, but, in general, considering the continued growth of (aerosols), the changes taking place in our attempt to keep up with research development, production procedures and machinery, it can be said that planning takes a major part of our daily dozen," Mr. Beach said. He added that aerosols have reached the stage where those that are considering these products as a part of their business expect to be in it for a long time. "Most of us will agree that we are 'off the ground' . . . but certainly have a long way to go before we can consider ourselves grown up."

Mr. Beach cited the work of the various subcommittees of the division and mentioned that those interested in aerosol dispensed paint sprays have received a tentative method for determination of solid content in aerosol coatings.

The Insecticide Standards

Sub-committee presented a method for determination of pressure on space insecticides. This has been approved by the Administrative Committee and circularized to the membership.

The Safe-Fill Sub-committee has approved a method to arrive at safe fill and it has been accepted by the Scientific Committee: The Administrative Committee has turned this over to the Commercial Standards Committee for its consideration and action.

A method for determining particle size on space sprays has been developed by the Particle Size Determination Sub-committee, which is now up for action by the Administrative Committee, Mr. Beach reported.

The Glass Aerosol Sub-committee has worked out a method to determine the pressure in glass containers. This is now before the Scientific Committee for action. This same committee is working on a project as it relates to drop tests. It is reported this work is progressing.

The Scientific Sub-committee on Public Regulations has been working with the Bureau of Explosives very closely on several problems and has recommended a change be made in the regulations which will permit the shipment of flammable compressed gas aerosols

which sustain a flame or flashback in accordance with the regulations if the valve is protected by an overcap or other device approved by the Bureau of Explosives. Since the last meeting this change has been circularized and it is understood the membership has reported favorably on this change, which is to be on the docket of the Bureau of Explosives this month.

The panel discussion on forecasting in the aerosol business opened with a talk on valves by P. H. Sagarin of VCA, Inc. He expressed the opinion that the next few years will be "crucial ones" for aerosols and will present an even greater challenge to valve producers. "Not only will we have to find and develop innovations that will make a better aerosol, but we will also have to maintain quality standards at a price level which will make for profitable marketing of expandable items."

"Only through joint cooperation of all parties concerned, namely, the packer, container supplier, propellant producers and the valve maker, can development and future progress be made in rapid strides.

"The initiating sources should take all parties into their confidence when preparing a new product. By so doing, with a minimum amount of waste, aerosols of which producers can be proud, can be marketed."

"In conclusion," Mr. Sagarin said, "Don't hold your valve producer

too lightly. Give him a break! When you see the trailer of cans backing up to your door, don't call him for valves with a threat that if they aren't there within an hour, you'll call (a competitor)."

The price situation on valves is a cause of concern to manufacturers, Mr. Sagarin pointed out. In 1947, he said, when only a few million aerosol packages were made, the price of valves was over eight cents. Today the price of valves has declined in direct proportion to the increase in the number of marketed packages. Currently valves sell for less than one-half of what they cost in 1947.

Valve producers have "a terrific challenge before them." Originally, there was only one type of valve used for every product. "Now it is important for the packager, due to his competition, to put out the best possible aerosol at the lowest cost, with maximum efficiency. Therefore valves today have to be 'tailor-made' for the product."

Aerosol forecasting from the standpoint of the loader was discussed by Douglas Atlas of G. Barr & Co., Chicago. "Our basic inter-

est," Mr. Atlas said, "is not in the academic side of forecasting but rather in careful planning and doing for the future. I believe it is impossible to anticipate what our customers will want and need very far in advance without going out on the impractical limb of wishful thinking. Perhaps the best we can do is race along parallel with them."

"In this direction our most potent tool is the fact that we talk to our customers constantly and thus have our fingers on the industrial pulse. Our theme song is: 'Can We Give You an Idea? Can we Help Work Out Your Idea?'"

"If we cannot use a crystal ball, it does not mean that we cannot plan and prepare ourselves for the changing requirements of a dynamic economy. Indeed, we can prepare in three directions—accumulation of adequate capital to enable us to finance our projects; training of scientists and engineers to do basic research and supplying a trained group that can meet the challenges and changes; the designing of machines that can produce aerosols cheaper and better."

"It is my basic premise that to meet tomorrow's needs we have to understand all we are working with today. I mean this in the broadest possible manner . . . that of building a field which we might call aerosol science. For example, our firm has undertaken a number of basic research projects . . .

among them an exploration into the nature and measurement of container corrosion and techniques for evaluation of spray patterns—papers on which have been published. Though these research projects all have immediate applications, the information we obtain has great bearing on our ability to solve our customers' future problems . . . and of course, our own. In this relatively new technology of aerosol manufacture, basic knowledge is so badly needed. No work is lost, no work is wasted. Each new aerosol material, each new bit of information seems to have a hundred applications."

"But no one firm can have a monopoly on knowledge. Inevitably, we turn to our suppliers with our ideas and plans, for these generate new requirements. Synthesize a new chemical for us. Develop a new can coating. Design a special valve."

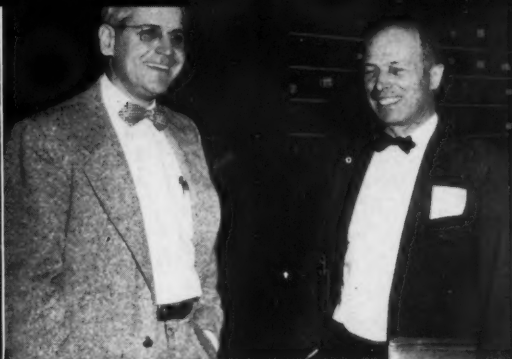
"If it is impractical to build machines to make still non-existent products, we can at least train men that are capable of designing them—a sort of mechanical research program. Actually, I'm not sure where we can differentiate between chemical and mechanical research in our work. The two are so closely woven together. I recall where a composite group working around the clock and using only spare equipment on hand in the plant, built a pilot line in 36 hours that was producing 10,000 units per eight hour shift. An impressive demonstration of the power of 'Know-how.'"

"It is a tribute to aerosol manu-

Left to right, top to bottom: Jack Varley of James Varley & Sons, Inc.; Dr. R. C. Downing, Kinetic Chemicals Division, E. I. du Pont de Nemours & Co.; Dr. Winston H. Reed, Aerosol Process Co.; Tom Morgan, Soap & Chemical Specialties; M. Lemmermeyer, Aromatic Products, Inc.; Russell H. Young,

Davies Young Soap Co. and William F. Pollnow, Vestal, Inc. Al and Mrs. Ruth Candy, Candy & Co.; A. C. Stepan, Stepan Chemical Co.; Dr. Robert C. Ferris, Purex Corp.; Mrs. Ethel F. Walsh, Aerosol Techniques, Inc., and Paul D. Torpin, McLaughlin Gormley King Co.





Left to right, top to bottom: James A. Green, Standard Oil Co. (Indiana); Joseph J. Flanagan, Federal Varnish Division; Norbert Toussaint, Florasynth Laboratories, Inc.; John L. Wilson, Economics Laboratory, Inc.; Robert Freund and Paul Roden, Mercantile Wax Division, Mercantile Metal & Ore Corp. Richard Hale, Polak's Frutal Works, Inc., and Walter Beard, Risdon Manufacturing Co.; J. B. Sutcliffe and W. Newell

Wyatt, Shea Chemical Corp.; Adrien DuBois, West Disinfecting Co., and Charles R. Lichtenberg, Chicago Sanitary Products Co. I. Y. Straus, and Miss Elizabeth Maguire, Dura Commodities Corp.; Robert C. Woodhouse, P. B. Gast & Sons Co.; C. L. Weirich, C. B. Dolge Co.; Louis E. Wells, Milner Products Co. and Al Candy, Candy & Co.

facturers that in so short a time they have come so far in applying automation to aerosol filling. This was a direct result of forecasting the need for efficient and economical means of producing merchandise, if there was to be expansion.

"Finally, a word about financing the research, training and automation programs need to prepare for the future. With equity capital so difficult to obtain, careful cost accounting becomes a vital tool in insuring fair earnings. Without adequate earnings we are living on borrowed time of the present . . . certainly not ploughing in for tomorrow's need. Indeed, cost accounting in itself is a method of improving efficiency and coupled with better ma-

chines and processes will help answer the problem of financing the future without shrinking our markets."

"The interest of propellant manufacturers in forecasting the growth and trends of the aerosol market is great, not only in regard to individual types of products but also in terms of total sales and national consumption," W. L. Machmer of General Chemical Division of Allied Chemical & Dye Corp., New York, pointed out.

"As suppliers of such a vital component (as propellants) we have a great responsibility to (aerosol marketers) and must be ever alert and responsive to their present and future requirements. That is why forecasting the future of the aerosol market is so important to us.

Unless increases in demand are accurately forecast and propellant plant expansions are made well in advance of rising demands, shortages could occur, and the marketing programs of many companies would suffer. It is because we have had faith in the future of the aerosol business that my company has made large capital investments in plant facilities and collateral equipment such as cylinders and tank cars. We have geared our manufacturing capacity well over current requirements to take care of current surges in demand and long term growth."***

. . . "How can we go about forecasting the aerosol market? There are two primary ways:

"One is to follow the trend of

total aerosol production. The second is to add up the individual trends of the various aerosol products to determine the changing total. While these may sound similar, they are actually two very different ways of getting the same desired total.

"The C.S.M.A. provides data on total aerosol units filled so the actual trend of the total can be checked periodically.

"When we check trends on individual products, any forecast for the future must include items which are not being sold as aerosols today, in order that we can anticipate requirements for all possible products. By adding all these individual items, we approach the figure by which the total market is forecast. What are these aerosols of tomorrow? . . . It appears that the personal products market is the most obvious area in which many new aerosols will appear.

"Some of the possibilities as we see them are: spray-on bandages and spray-on gloves; permanent waving lotions, men's hair dressing, baby oils and baby powder, bath powders, and the like. Also such specialty products as household adhesives, windshield defrosters, etc., will find a ready market if good formulations are obtained and satisfactory promotion made.

"In order to add such products to the predicted aerosol totals of the future, we need to know certain things about them.

"That the item is a really good aerosol from the standpoint of consumer acceptance. To check this, and to perfect formulations, we offer technical service and maintain a formulation testing laboratory to help develop optimum formulations at lowest cost.

"2.) A knowledge of the size and trend of the current market for similar or competing items is essential in order to estimate possible growth. This has to be based on past experience concerning the impact of other aerosol products on their corresponding markets. The growth of the household insecticide market is a good example. While total dollar volume rose with the impact of the aerosol units, the growth was less than the total aerosol sales indicating a loss of other forms of packing to the aerosol. The same pattern appears true of the shave cream market.

"3.) An idea of the extent of promotion necessary to penetrate a given market is also needed as is a study of whether or not there are potential marketers willing to invest funds necessary to put over a product. Hair lacquers are a good example of the successful promotion of a type of aerosol product, but there is no question that it would not have succeeded to anything like the extent it has without extensive promotion."

According to Harvey Tull of Crown Can Division of Crown Cork & Seal Co., Philadelphia, "Forecasting and forecast management is a most real and vital part of today's modern and successful business. Basically, and in some

detail, I would like to explain the methods used by Crown to forecast sales in the aerosol field. Our principal objectives in sales forecasting are two-fold. First and foremost to serve best the trade requirements in the most efficient manner possible and secondly, to make judicious use of our capital monies to expand our facilities and sustain our leading position in the rapid growth of (aerosols).

"Our sales forecast is still the key instrument in planning and controlling operations. Short term forecasts are employed to regulate production, inventories and purchasing, to direct sales efforts and cash requirements. Long range forecasting provides the foundation for our financing and plant development.

". . . Aerosol sales forecasts by Crown are the result of a composite of several methods in an attempt to bring as much experience as possible to bear upon a complex problem. We use this composite for several reasons:

"a.) The rapid growth and constantly changing pattern of aerosol use necessitates employment of all possible avenues to get up-to-date information. . .

"b.) Forecast must be as complete and accurate as possible, because of the time and money necessary to make major changes in can-making equipment. . . It's not simply a new can size, but presses for ends, coater and lithographing equipment and direct materials, such as solder, compounds, lacquers, etc.

"c.) Detailed experiments with many aerosol-using industries is obtained through the combined knowledge of Crown employees of varying backgrounds. The broad coverage of our container, Crown and closure and machinery division gives us excellent penetration in this field.

"d.) Use of independent methods for forecasting permits a checking system which increases the accuracy of the forecast.

"The methods used by Crown as outlined by Mr. Tull include:

"a.) A detailed forecast of Crown sales by salesmen and evaluated by district sales managers. The forecasts of Crown sales of aerosols are submitted to can division headquarters shortly before the beginning of each calendar year by each district manager throughout the country and export, as part of the district annual forecast for all types of cans. These forecasts are a total of those made by the individual salesman in conjunction with his district and area manager. They are specifically detailed by month, size and type of can and product use. When approved these forecasts become our annual budget. They are kept up-to-date by monthly revisions for operating purposes.

"b.) We depend heavily on independent forecasts of Crown sales by the product manager and top sales executives. As manager of aerosol products, I, from a staff position, and the area sales managers in the line organization, submit more or less formal estimates covering approximately the same

time periods. These are prepared and matched against the sales forecast.

"c.) Special industry surveys are used for trend determination. We keep in constant touch with aerosol fillers, manufacturers, and, of course, marketers. The cooperation received from the loaders, valve, propellant, and equipment manufacturers has a strong bearing on our plans for the betterment of service to customers.

"d.) Another method used is industry sales forecasts employing statistical media. Statistical trend analyses are prepared for the aerosol industry as a whole and for some its more important components and product groups and similar analyses are prepared for our sales projection.

"e.) And, finally, we make a combination of forecast results. You see the forecasting methods just used result in several detailed estimates of future aerosol sales largely for Crown, but also for all aerosol marketers.

". . . Final estimates are a composite of the independent results. . . As the Crown forecasts made by salesmen and managers come in, they are subjected to statistical trend checks for reasonableness by factoring past performance. At the same time they are reviewed and evaluated by sales management and then closely compared with production schedules for practicability. Industry forecasts are based upon opinions of industry leaders as expressed in personal interviews and also upon statistical projections of past sales figures for the industry and many of the products packaged as aerosols. After any marked differences in the forecasts resulting from these two basic procedures have been reconciled, the industry forecast stands as a bench mark against which our own sales penetration may be measured."

The final speaker of the aerosol forecasting panel was Robert Williams of Audits and Surveys Co., New York. "In the field of survey research, cross section surveys of retailer opinions and attitudes are often very helpful in determining their appraisal of the underlying reasons for current product movement and the effect of cooperative merchandising effort, premium deals, couponing, advertising campaigns, etc."

". . . Forecasting in the aerosol business is a highly hazardous thing," Mr. Williams pointed out. "Of course, this is always true of forecasting," he said, but it is especially hazardous with aerosols because they are so new. Aerosols are new, Mr. Williams stated, "1.) in terms of the packaging idea itself, and 2.) in terms of the fields and products that it may be applied to. The whole idea of convenience in packaging is relatively new and here, in a great many instances, you are not concerned with a really new product—it is just a different way of packaging an old product."

Other ways in which survey research of retail stores can be helpful include giving the manufacturer an idea of how he rates in the mind of the retailer as against competing manufac-

turers. "This is important because in many cases the retailer has a great influence on which brand of products is ultimately bought by the consumer. If the retailer likes the policies of one company and dislikes those of another, he is more likely, whenever he has the chance, to promote the product of the company which he likes and which treats him better.

"Consumer marketing surveys can be helpful in many ways. They can be used in finding out about buying habits (frequency and amount bought) and consumption patterns (frequency and amount used), product acceptance and performance and to give clues as to the overall effect of advertising by measuring the climate of public favor with respect to competing brands.

"As more and more of the facts become available and are brought to bear in the marketing situation, the more rounded and complete and in balance will be the kit of estimating tools with which we are working. All this cannot help but result in giving us better clues as to what we should expect in the future."

Insecticide Division

IN opening the insecticide division's first session the morning of May 21, the chairman, Carlos Kampmeier of Rohm & Haas, called attention to the considerable interest chemical specialty manufacturers have in livestock sprays and to the current stalemate over fly control sprays for dairy cattle. The Miller bill, he said, establishes tolerances for pesticide residues, while the Food & Drug Administration has firmly decreed that there shall be no residues in milk. Petitions for establishment of such tolerances for milk have not been successful, he pointed out, despite conflicting evidence regarding methoxychlor residues and the lack of a position on pyrethrum residues. The Food & Drug Administration, he declared, should change its policies and establish tolerances for milk as provided by law.

Insect resistance to insecticides has become a national problem, Dr. C. H. Hoffman of the USDA's Agricultural Research Service claimed in a review of the resistance problem. Insect pests, he said, are adept at adjusting themselves to man's attempts to control them by chemicals. Increased numbers of applications are becoming more common, resulting in overdoses which could lead to the point

where tolerances are exceeded.

In a review of the field, Dr. Hoffman brought his audience up to date on resistance problems involving insect pests of livestock, man and field crops.

Each year, he said, additional pests are becoming resistant to DDT and other chlorinated hydrocarbon insecticides that had once provided outstanding control. The organic phosphorus materials, which have been substituted, are, in general, highly effective but some pests, particularly mites, he said, have become resistant to them. One significant fact is that tolerance to a given insecticide seems to predispose an insect to rapid resistance to other insecticides, particularly if they are closely related structurally.

Resistance will increase, Dr. Hoffman predicted, if available compounds continue to be used. This problem is further complicated, he added, because substitute compounds, developed to overcome resistance to an original chemical, are themselves encountering resistance. He mentioned three newly developed substitute materials to which resistance showed up before they reached commercial use.

The impact of the resistance problem is revealed in several directions, he continued. Increased dosages and number of applications waste time and money and leave residues exceeding F. & D. tolerances and this will lead to seizure of the crops. Manufacturers are faced with financial risks because they cannot know how long the product can be used before resistance appears. If production is curtailed or stock-piling deemed inadvisable, supplies might become inadequate to meet sudden emergency outbreaks. Entomologists have lost the confidence of growers, and research to develop alternate materials is being demoralized.

When an insect becomes resistant, Dr. Hoffman advised, alternate materials should be used until better control measures can be worked out. Since the bugs differ in their capacity to become resistant, he felt that it is unlikely that any one material will suddenly become ineffective against a large number of pests. As to the future, Dr. Hoffman urged research to develop basic information on the mode of action of insecticides and a constant study of new materials. One line of investigation, he suggested, might be into use of two or more insecticides with different modes of action.

Pyrethrum is one of a few natural products which still maintain a place in a market dominated by synthetics, Dr. Morton Beroza, of the USDA's Agricultural Research Service remarked in a paper on "Sesamolins and Related Compounds as Synergists for Pyrethrum." But pyrethrum, he added, would not hold its favored position were it not for the boost imparted by synergists. Insect resistance to pyrethrum, he also stated, is less than to the synthetics and this prompted a study of synergists for pyrethrum.

It was noted, he went, on that a compound containing the methylenedioxyphenoxy group (e. g. sesamolins) produces a greater degree of synergism than the corresponding compound containing a methylenedioxyphenyl structure (e.g. sesamin). This led to the synthesis of more than 60 compounds

(Turn to Page 167)

T. D. Johnson, Jr., (center) manager, propellant sales, Kinetic Chemicals Division, E. I. du Pont de Nemours & Co., receives Film Council of America's Golden Reel Award plaque, from Paul A. Wagner, president of the Film Council. Du Pont's 13½ minute color film, "The Spray's the Thing," dealing with aerosols, was voted outstanding non-theatrical 16 mm. film of 1955. Ross Sutherland of John Sutherland Productions watches ceremony during CSMA's 42nd mid-year meeting in Chicago May 22.



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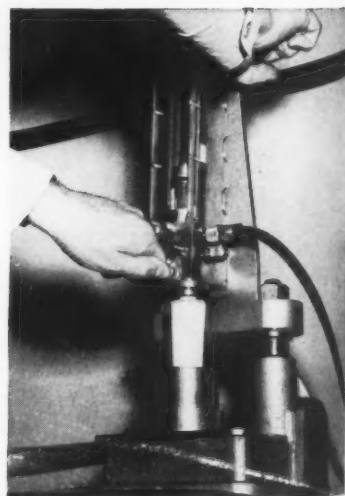
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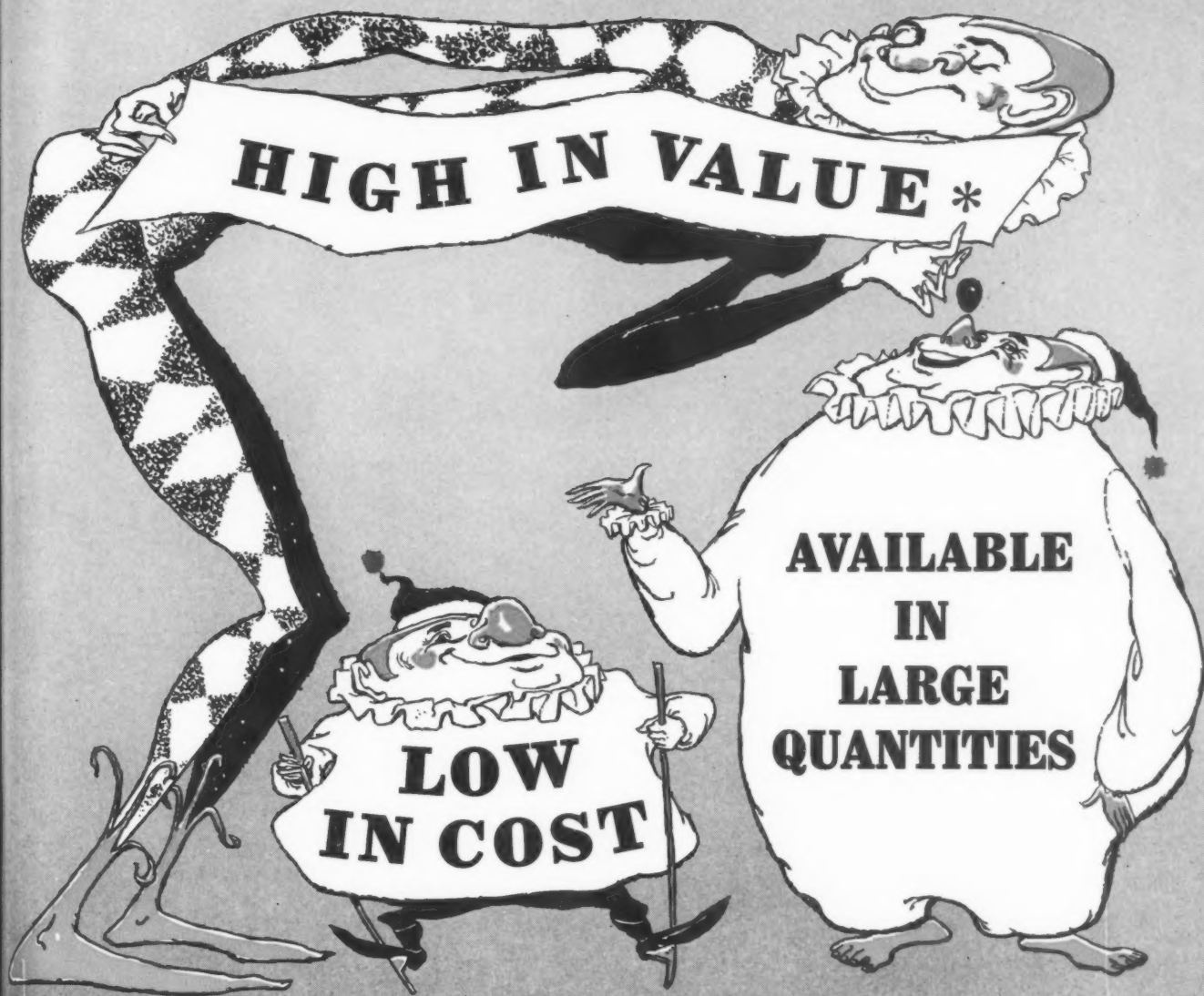
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Aerosol Survey for 1955

SALES of U. S. and Canadian produced non-food aerosols last year totaled about 240 million units having an estimated retail value of \$250 million, the 1955 Aerosol Products Survey, released during the 42nd mid-year meeting of the Chemical Specialties Manufacturers Assn. in Chicago, May 21, revealed.

The survey was based on reports submitted by 67 of 116 aerosol fillers to whom questionnaires were sent. Replies containing a detailed breakdown of the aerosol products

filled were sent to Ernst & Ernst, New York accounting firm, which collected and tabulated all the data and submitted final total figures to CSMA. Aerosol valve and container manufacturers were asked to report their total figures regardless of sizes, styles, etc.

Sales of aerosol products in terms of units and retail value in 1955 were up 30 and 32%, respectively, over comparable 1954 totals.

Still the number one selling aerosol product are insecticides, with approximately 56 million units

sold in 1955, and representing 23.3 percent of the industry's total for last year. In 1954, when aerosol insecticides declined by about four million units from the previous year's totals, the figure was 43,179,070. Of the three insecticide categories, space insecticides, residual insecticides (roach and ant sprays, etc.) and mothproofers, the bulk of the sales was in space sprays: approximately 39 million units in '55, up nine million from '54. The residual total last year was about 8½ million units and mothproofers were

C. S. M. A. Survey of Aerosol and Pressurized Products Packed in 1955 (Non-Food Products Only)

1955

Number of units by the sizes indicated for each of the products listed, packed by 67 companies in 1955, including government contracts.

NUMBER OF UNITS PACKED

Product	Glass Containers All Sizes	Metal Containers High Pressure	12-Ounce And More	6-Ounce And Less	Total
1. Space insecticides	—	990,231	33,793,439	4,143,631	38,927,301
2. Residual insecticides (Such as roach and ant sprays)	—	12,400	7,740,078	552,352	8,304,830
3. Mothproofers	500,000	549,708	7,522,868	170,775	8,743,351
4. Room deodorants	—	7,500	12,402,293	19,700,387	32,110,180
5. Pigmented and metallic paints	—	—	7,203,339	520,029	7,723,368
6. Clear plastic sprays	—	—	1,419,902	104,240	1,524,142
7. Fire extinguishers	—	—	1,930,635	41,004	1,971,639
8. Other household products (Such as waxes, oven and other cleaners, insect repellents, water repellents, rug shampoos, etc.)	500,000	—	2,826,503	2,877,600	6,204,103
9. Shaving lather	—	—	9,098,163	36,289,212	45,387,375
10. Hair lacquers	189,253	—	21,426,897	32,174,635	53,790,785
11. Other personal products (Such as shampoos, perfumes, colognes, personal deodorants, sun tan oils, hand lotions, etc.)	8,854,831	—	1,435,589	3,930,363	14,220,783
12. Medicinals and pharmaceuticals (Such as athlete's foot, burn preventives, antibiotics, etc.)	357,705	—	256,500	840,974	1,455,179
13. Snow (All types)	—	—	5,869,673	949,044	6,818,717
14. Miscellaneous products (Such as pet sprays, mildew preventives, lubricants, ignition sprays, anti-static sprays, and any others)	9,771	107,916	6,793,827	2,690,253	9,601,767
TOTALS	10,411,560	1,667,755	119,719,706	104,984,499	236,783,520

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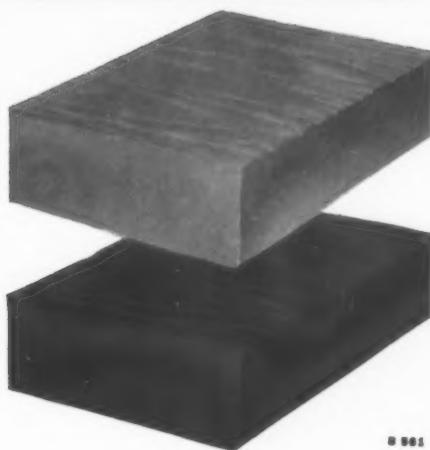
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AEROSOL AND PRESSURIZED PRODUCTS SURVEY

1955
FIVE YEAR GROWTH

	AEROSOL UNITS (ADJUSTED FIGURES)	RETAIL VALUE (ESTIMATED)
1951	42,000,000	\$ 55,000,000
1952	97,000,000	\$ 107,000,000
1953	140,000,000	\$ 150,000,000
1954	185,000,000	\$ 190,000,000
1955	240,000,000	\$ 250,000,000
1955 % INCREASE OVER 1954	+ 30 %	+ 30 %

put at 8,743,351, with gains shown in all three categories.

Hair lacquers, in second place, had a 1955 total of 53,790,285 units, which is believed to be an increase over the previous year, although figures for hair lacquers were not shown separately in the 1954 totals, but were included in "other personal products."

Aerosol shave lather products were in third place in 1955 with a total of 45.4 million units, which represented a 7.3 percent increase over 1954, when sales were reported at 42,294,628 units.

The fourth major category of aerosol products sold in 1955 was room deodorants at 32,110,180 units, up 86.7 percent from 1954.

"Other Personal Products" (shampoos, perfumes, colognes, deodorants, sun tan oil, hand lotion, etc.) took a sharp dip in 1955 dropping from 40,379,123 units in '54 to 14,220,783 in '55. However, the drop is more apparent than real, since the 1955 figures do not include hair sprays (53.7 million units) which were reported in this category for 1954. The chairman of the Aerosol Survey Committee, Frederick G. Lodes, Precision Valve Corp., Yonkers, N. Y., pointed out in the report that "it is felt that per-

sonal deodorants, sun tan oils, etc. are definitely on the increase."

In the under-10-million dollar class are pigmented and metallic paints with 1955 and '54 totals of 7,723,368 and 8,203,687; clear plastic sprays: 1,524,142, up from 1,353,613 in 1954; "Other Household Products" (waxes, oven cleaners, insect and water repellents, rug shampoo, etc.) 6,204,103, against 3,108,572 for the previous year; medicinals and pharmaceuticals: 1,455,179, up from 1,134,405; artificial snow: 6,818,717, as compared with 6,083,396 in '54, and miscellaneous products such as pet sprays, mildew preventives, lubricants, ignition and anti-static sprays, etc., 9,601,767, a gain from the 1954 figure of 6,422,556.

A new classification, fire extinguishers, appears in the 1955 survey. The total sales of aerosol fire extinguishers is put at 1,971,639.

(Turn to Page 190)

Aerosol and Pressurized Products Survey—1954
(Non-Food Products Only)

1954

Number of units by the sizes indicated for each of the products listed, packed by 53 companies in 1954, including government contracts.

Number of Units Packaged

Product	High Pressure	Twelve Ounce	Six Ounce and less	Total
Space insecticides	535,900	27,208,183	2,346,561	30,090,644
Residual insecticides—roach and ant sprays, etc.		6,437,189	223,908	6,661,097
Mothproofers		6,332,115	95,214	6,427,329
Room deodorants		7,492,464	9,710,590	17,203,054
Pigmented and metallic paints		7,385,215	818,472	8,203,687
Clear plastic sprays		1,257,476	96,137	1,353,613
Other household products—waxes, insect repellents, water repellents, rug shampoo, etc.		1,884,509	1,224,063	3,108,572
Shaving lather		5,109,819	37,184,809	42,294,628
Other personal products—shampoos, perfumes, personal deodorants, suntan oil, hand lotion, hair lacquers, etc. in metal and glass		12,188,129	28,190,994	40,379,123
Medicinals and pharmaceuticals—athlete's foot, burn preventives, etc.		609,502	524,903	1,134,405
Snow—all types		5,024,165	1,059,231	6,083,396
Miscellaneous products—dog sprays, mildew preventives, ignition spray, anti-static spray, etc.	89,536	4,465,851	1,867,169	6,422,556
Total	625,436	85,394,617	83,342,051	169,362,104

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Insecticide Sales Up in 1955

TOTAL sales of liquid insecticide sprays rose in 1955 to 10,557,386 gallons, compared with 10,433,000 gallons in 1954, representing an increase of 1.19 percent. Sales of insecticides for 1955 are reported in the fourth annual survey conducted by the Insecticide Division of the Chemical Specialties Manufacturers Assn. and reported on during the CSMA's 42nd midyear meeting in Chicago, May 21-22. Previous surveys were conducted in 1953, for 1951 and 1952; 1954, for 1953, and 1955 for 1954 sales. The 1956 household and industrial insecticide survey covering 1955 sales was participated in by 118 manufacturers, 48 more than in the previous year.

Although packaged sizes (including one gallon) of liquid sprays increased by six percent from 8,161,000 to 8,650,765 gallons last year, bulk sizes showed a decline. In 1955, 1,906,621 gallons in bulk sizes were sold, as compared with 2,272,833 gallons in 1954, or a net decline of 16.11 percent. Sales of package and bulk sizes for the five years covered by the survey are shown in Figure 2.

Packaged space spray sales, showing the first decrease since 1951, were 1,797,515 gallons in 1955, as against 2,235,926 gallons in 1954, or a drop of 19.60 percent. While packaged DDT residual sprays were off slightly in '55, as compared with '54, chlordane, dieldrin and lindane residual spray sales rose sharply in '55, as compared with '54. Sales of DDT sprays last year totaled 1,960,935 gallons, down 8.02 percent from the 1954 sales figure of 2,123,005 gallons. Chlordane, dieldrin and lindane type residual sales in 1955 amounted to 3,520,297 gallons, compared with 2,398,117 gallons in 1954, or up 46.79 percent. In addition the latter type residual sprays increased

their total percent of the market for packaged sprays, going from a range of 31.68 to 35.44 percent to 48.36 percent in 1955. (See Figure 3.)

Although sales of insecticidal aerosols have more than doubled since 1951, insecticide spray sales have not reflected a loss.

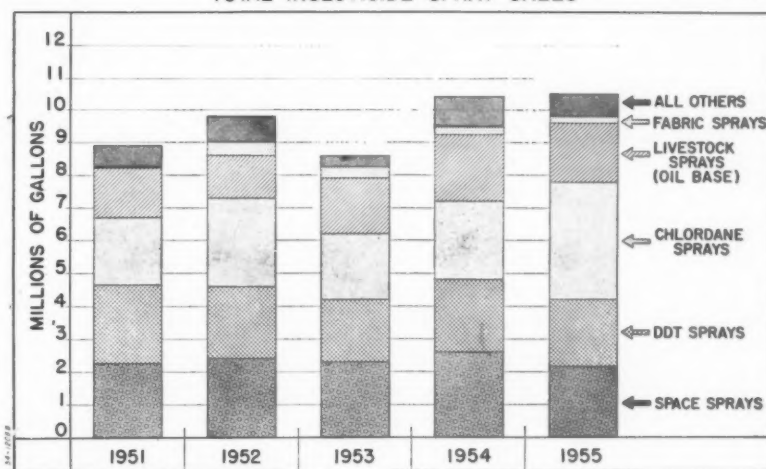
A decrease of 41.17 percent in sales of fabric pest sprays was reported for 1955, as against 1954. Last year sales of these products dropped to 155,110 gallons from the 1954 figure of 263,687 gallons.

Packaged oil base livestock spray sales rose, but bulk sales declined in 1955, while total sales decreased only slightly. Package sales totaled 926,275 gallons last year, up 3.87 percent over 1954 sales of 891,750 gallons. Bulk sales in '55 were 874,318 gallons, against 1,071,434 in 1954, showing a drop of 18.39 percent. Total sales amounted to 1,800,593 gallons last year, against 1,963,184 gallons in 1954 for a net loss of 8.28 percent.

Both package and bulk sales of livestock emulsion concentrates

TOTAL INSECTICIDE SPRAY SALES

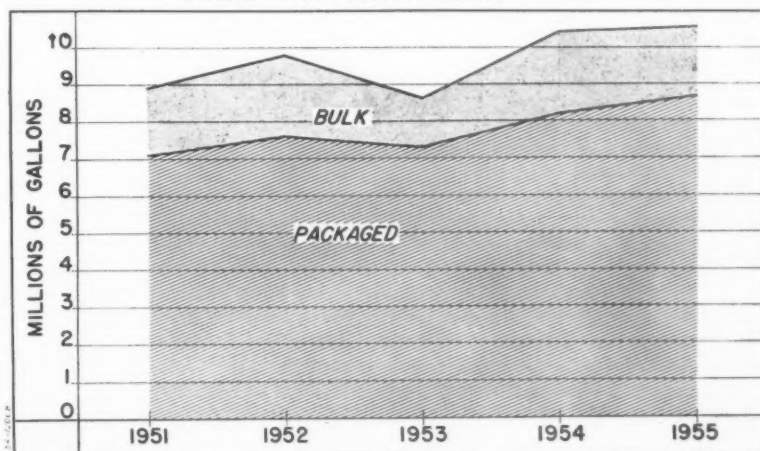
FIGURE 1



PREPARED BY ESSO STANDARD OIL COMPANY

TOTAL INSECTICIDE SPRAY SALES

FIGURE 2



PREPARED BY ESSO STANDARD OIL COMPANY

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were greater in '55 than in 1954. Package sales amounted to 221,715 gallons in 1955, up 70.85 percent from 129,769 gallons in '54. Bulk

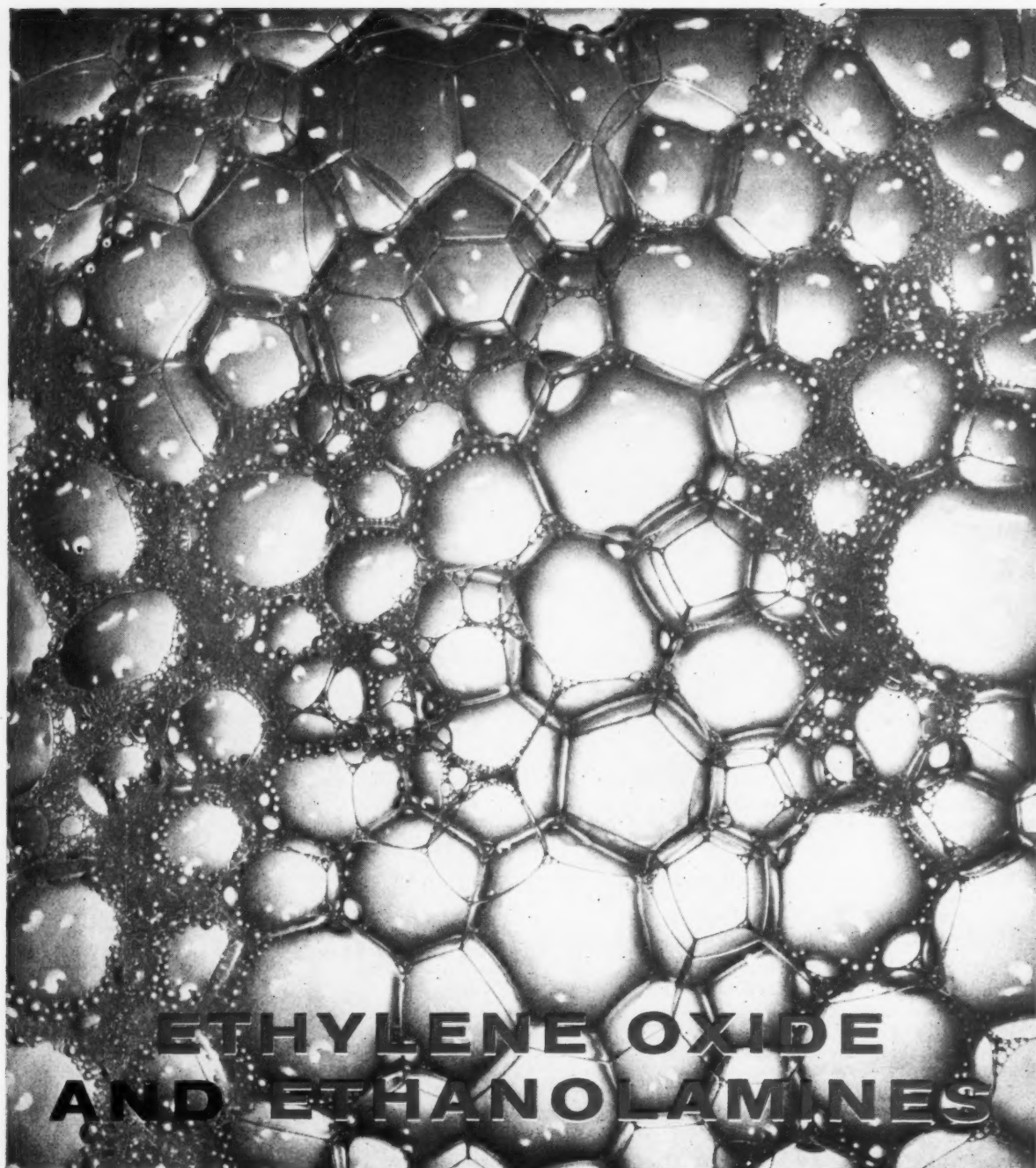
sales rose from 50,496 gallons in '54 to 132,918 gallons last year, or 163.22 percent. The report notes that this accounts for the reduced

sale of wettable livestock powders this year.

Other emulsion concentrates again showed a slight increase in

Table I. Sales at Manufacturers' Level—1955 Survey of Household and Industrial Insecticides

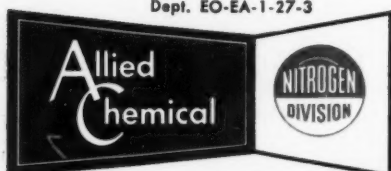
	DATA IN UNITS				DATA IN GALLONS
	Less than Pint	Pint	Quart	Gallon	Over one Gallon
1. SPACE SPRAYS	149,196	6,638,762	2,838,702	248,669	356,142
With knockdown agents such as pyrethrins and activators, thiocyanates, allethrin, etc., with no more than 2% DDT or other residual agents					
2. RESIDUAL SPRAYS					
A. With over 2% DDT with or without other materials except chlordane, dieldrin or lindane.	984,423	7,789,812	2,653,864	262,216	77,588
B. With chlordane, dieldrin or lindane, with or without other materials (intended primarily for crawling insects).	789,225	14,411,906	4,957,396	430,133	114,208
3. FABRIC PEST SPRAYS					
Products specifically intended for treating fabrics for moth control, etc.	—	506,416	197,181	18,980	23,533
4. LIVESTOCK SPRAYS					
Oil base products to be used without dilution.	828	49,947	109,950	892,492	874,318
5. LIVESTOCK EMULSION CONCENTRATES					
To be diluted with water.	84,270	83,947	233,815	147,501	132,918
6. EMULSION CONCENTRATES OTHER THAN LIVESTOCK					
To be diluted with water. (non agricultural)	14,324	48,819	113,568	37,599	222,996
7. CONCENTRATES					
To be diluted with petroleum base. (non agricultural)	313	108	5	5,624	48,139
8. STORED GRAIN AND BIN SPRAYS NOT INCLUDED IN ABOVE	—	3,120	1,090	13,142	56,779
TOTALS	2,022,579	29,532,837	11,105,571	2,056,356	1,906,621
DATA IN POUNDS					
	Less than 5 Lbs.		5 Lbs. and over		
9. LIVESTOCK, WETTABLE POWDERS					
To be suspended in water.		360,509		1,467,198	
10. POWDERS					
For application without water.		1,481,842		837,031	
11. FLY BAITS		2,019,955		1,819,462	
TOTALS		3,862,306		4,123,691	
DATA IN UNITS					
	Pint and less		Over 1 Pint		
12. CATTLE SMEARS AND OTHER SCREW WORM REMEDIES		209,517		63,513	
	2 Oz. and less		Over 2 Oz.		
13. ANT PASTES, TRAPS, ANT BAITS		2,212,185		238,156	
14. INSECT REPELLANTS		813,445		222,825	
15. SMALL PET INSECTICIDES					
Other than powders.		46,495		52,145	
16. VAPORIZER CHEMICALS					
For automatic Vaporizer installations, (Lindane etc.).		170,609		36,345	
TOTALS		3,242,734		549,471	



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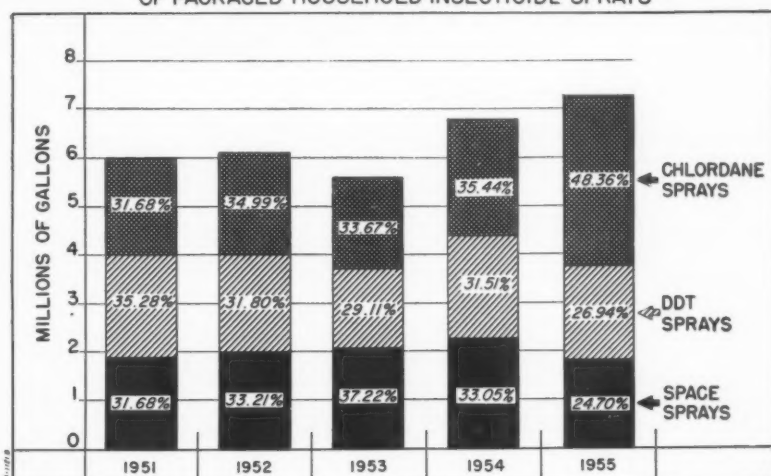
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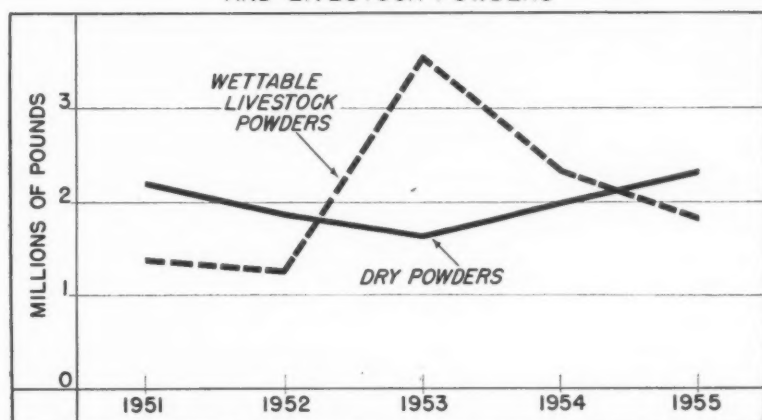
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SALES OF HOUSEHOLD
AND LIVESTOCK POWDERS



PREPARED BY ESSO STANDARD OIL COMPANY

sales in 1955. In 1954, 71,156 gallons were sold, as compared with 72,988 gallons sold in packages in 1955. Bulk sales likewise increased slightly, 1.35 percent, or 222,996 gallons in '55, and 220,015 gallons in the previous year. Non-emulsion concentrate sales declined sharply in 1955, when 53,797 gallons were sold, as against 160,686 in '54, or a net drop of 66.52 percent. Stored grain spray sales fell 79.21 percent last year, from 339,605 gallons in '54 to 70,584 gallons in 1955. Comparative data on each size are shown in Table II.

Also off in '55 were sales of livestock wettable powders. They continued their downward trend from a high of 3,565,801 pounds in 1953 and 2,328,743 pounds in '54

to 1,827,707 pounds in 1955 (See Figure 4). This represents a drop of 21.51 percent from 1954. Other powder sales continued upward with 2,318,873 pounds reported in 1955, as compared with 1,983,692 in 1954, or an increase of 16.89 percent.

Ant pastes, traps and ant baits sales showed an increase of 54.31 percent in 1955 over 1954, with figures of 2,450,341 and 1,587,838 units for the two years, respectively. The 1955 total is still short of the 1953 sales figure of 2,575,938 units. Fly baits, reported for the first time in this year's survey, amounted to 3,839,417 pounds in 1955, divided almost equally between packaged and bulk sizes.

Insect repellent sales were up sharply last year, when 1,036,270 units were sold, as compared with 276,750 in 1954, or a percentage increase of 274.44. About 80 percent of the units sold in 1955 were in small packages.

Small pet insecticides sales in 1955 totaled 96,640 units, an increase of 325.20 percent over 1954 sales of 23,198. Vaporizer chemicals, reported for the first time, amounted to 206,954 units in 1955.

Figures on the number of containers used by the insecticide industry contained in the survey show that 42,669,000 insecticide

(Turn to Page 195)

Table II. Percentage Change 1955 Compared to 1954
(Data show as Increase or (Decrease) Over 1954)

Product	Less Than		Over 1 Gallon		
	Pint	Pint	Quart	Gallon	(In Gallons)
Space Sprays	(85.52)	(19.83)	(5.53)	(35.40)	(0.91)
DDT Sprays	24.39	(7.43)	(9.56)	(20.70)	1.46
Chlordane Sprays	48.52	35.12	39.91	194.76	246.88
Fabric Sprays	(100.00)	(38.62)	(42.56)	(13.24)	(55.43)
Livestock Sprays	100.00	25.91	122.99	2.06	18.39
L. S. Emul. Conc.	947.09	10.69	31.00	96.22	163.22
Other Emul. Conc.	(55.04)	(49.35)	(6.41)	40.49	1.35
Non-Emul. Conc.	(42.88)	(97.50)	(99.97)	(85.15)	(59.12)
Stored Grain Sp.	—	100.00	178.06	(74.07)	(80.52)
Total Sprays	(15.54)	4.97	8.94	5.68	(16.11)
Total Units					
Ant Pastes, Etc.	54.31				
Cattle Smears, Etc.	119.64				
Insect Repellents	274.44				
Small Pet Insecticides	325.20				



Dispensing Powders

New pressure dispensed "Girdle Spray" deodorant talcum powder of Eppli Products Corp., Cleveland, for aiding women's girdles to slide on or off more easily. Push-button applied powder, perfumed with honeysuckle fragrance, also contains hexachlorophene. Powder is packed in Crown "Spra-Tainer" by Continental Filling Co., Danville, Ill. Deluxe plastic Crown cap covers Risdon valve. Retail price \$1.50.

DURING the last decade, the aerosol container has grown from a rather obscure package used primarily for insecticides to a major medium with application in many industries. In the toilet goods industry, the aerosol is now competing with, and is steadily gaining on, the older forms of packaging for the major portion of the toiletries on the market. Up to now, the pressure containers were used mainly for the liquid products, leaving the powdered materials for the conventional packages—the shaker type, the powder box, and also the rather new polyethylene container. Today, however, even the powdered products are finding their way into the "push-button" container.

The first material to be packaged in aerosol form which might be placed in the "powder" or "solid" category was the pressure-packed paint spray. This product contained a heavy concentration of pigments together with solvents, drying oils and other carriers, all necessary to give proper coverage during

aerosol application. The carriers also aided in the dispersion and suspension of the pigments, allowing them to be pressurized. In addition, metal or glass balls were placed in the container to break up sedimentation which may have formed during shelf life or while standing.

There were various problems to overcome in the paint spray, some of which were found applicable in the preparation of powder toiletry, pet, botanical and pharmaceutical aerosols. Many solvents and carriers used in the paint spray were of a fast-drying nature, and if the pigments did not clog the orifice, the solvents and carriers could. It was absolutely necessary to use solids within a definite particle size to insure the proper seating of the valve in order to obtain complete valve cut off, and also to prevent clogging of the orifice.

A new powder aerosol recently introduced and now being successfully marketed is the fire bomb which contains sodium bicarbonate as the active ingredient. A basic method of dispersion is used in this product since it is only a one-shot container. The valve seat is punc-

tured allowing the free flow of contents without shut off. There is no intricate mechanism to cause clogging and valve seating problems; the previously-mentioned metal or glass balls again being employed to break up sedimentation.

The aerosol container can offer certain advantages for powder application that the conventional packages do not. Dispensing powder under pressure gives the mix uniformity and prevents oxidation by not permitting contact with oxygen of those chemicals prone to oxidation. This also prevents shelf life decomposition of those materials. Products which are usually hygroscopic under normal packaging conditions and prone to decomposition, lose this characteristic when aerosol packaged. Finally, this packaging medium excludes air borne microbiological contamination of the product.

Most powdered products, as normally formulated, are completely incompatible with the aerosol propellants now on the market. It is, therefore, necessary that the product be re-formulated before it is packaged in a pressure container. It is necessary in order to achieve

*Paper presented during the 25th annual meeting of the Toilet Goods Assn., New York, May 6, 1956, and reprinted from the 25th Proceedings of the Scientific Section of the Toilet Goods Assn.

from Pressurized Containers

By Victor DiGiacomo*

Givaudan-Delawanna, Inc.
New York

success, to have a uniform material with a definite particle size, and to eliminate from the formula certain gums and resinous ingredients which would not be soluble in the aerosol propellants and suspending solvents. The use of these ingredients would cause valve clogging and improper valve seating, resulting in container leakage and non-operative containers. Pressurized containers can be formulated utilizing 10 to 30 percent of solids depending on the type of product and the formulation. The propellant mixture may vary depending on the formulation and the end use. We find that 65% "Freon 11" and 35% "Freon 12," or the corresponding "Genetrons," are suitable for most formulations containing approximately 20% powder.

Valve Design Important

THE design of the valve and the type of seating are important when powders are to be dispensed. Component parts of the valve must not be affected by the solvent used as the suspending medium. We have found that certain of the valves now available can be used for powder dispensing. We also know that those valve producers who do not have a product available which is suitable for this purpose are now conducting research in order to obtain such a valve. It is our opinion, however, that if a system or method of powder dispensing is recommended, it would facilitate the work of the valve manufacturer in adapting their valves to this method of powder dispensing.

Various methods and principles have been utilized in conducting experiments for the development of pressurized powdered products. Some of these methods make use of wetting agents to obtain dispersion while others work on entirely different principles. We suggest a method which we have found to be satisfactory for this type of application. Our particular system entails the use of a suspending medium which prevents agglomerative sedimentation through its ability to absorb the propellant, in addition to being able to suspend the powder ingredient. Based on this principle, we found, during our experimentation, that the suspending material utilized for powder products should have, if at all possible, the following characteristics:

1. Soluble in the various propellant mixes which may be used;
2. Odorless or have a very low odor level;
3. Compatible with and soluble in essential oils, aromatic chemicals, isolates and other fragrant materials;
4. Greaseless in character;
5. Non-irritating;
6. Depending on end use of the finished product the suspending agent should be usable in low concentrations;
7. Capable of suspending the powder formulation;
8. The formulation must be readily dispersed on shaking in the event of sedimentation with-

out the use of a mechanical device;

9. It must not attack the valve or other component parts of the aerosol container;
10. It must preferably be soluble in hydrocarbons.

Our experiments have shown that a purified grade of isopropyl myristate has all the required characteristics and is the ideal suspending agent for powdered products. Due to its unique solubilizing properties and co-solvency, it performs an additional important function by preventing the crystallization of certain bacteriological agents, perfume constituents and other ingredients which may crystallize on long standing resulting in valve difficulties. The use of a larger concentration of isopropyl myristate in products such as liquid make-up, plant sprays, etc., adds to the functional properties of the finished product. This higher concentration creates a material with a higher residual nature allowing the solid ingredients to adhere in a given area of application.

The propellant mix must also be selected carefully, considering not only the pressure required to make the container operative, but also the solvent effect the propellant might have on the suspending medium. Propellant mixes can be obtained allowing for their use in both metal and glass containers, and both the "cold filled" or "pressurized" methods of loading can be used for the manufacture of this type of package.

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CSMA Meeting (From Page 148)

containing the first named group as candidate synergists.

Further explaining his work, Dr. Beroza told how the best compound, considering results with house flies by the turntable method was the 2-(2-ethoxyethoxy) ethyl 3,4-methylenedioxyphenyl acetate of acetaldehyde. Commercial production of this synergist, he said, would require an economical synthesis of sesamol.

The increased consumer demand for prepared foods which need only to be baked and require no home mixing of ingredients has raised new problems in the control of stored grain and flour insects, according to George B. Wagner, director of economic biology, Pillsbury Mills, Inc., Minneapolis. While some of these pests in the past may have been considered primary feeders on grain, it is now found many of the species will accept other foods—in fact, may prefer them. Dr. Wagner stated. His subject was "Economic Losses Caused by Stored Grain and Flour Insects Can Be Reduced."

Following a discussion of the origin of those insect pests of stored grain and stored cereal products, Dr. Wagner pointed out that "The increasing inter-relationship between various phases of the food industry contributes greater possibilities for insect infestations."

He summarized the situation as follows:

"... We might ask ourselves if our knowledge of insect ecology of these particular insects is sufficient. If sufficient, is such knowledge sufficiently disseminated to all those engaged in producing and storing raw agricultural products intended for processing into human food? Are processors, transportation agencies and those engaged in the distribution of human foods sufficiently informed? In my humble opinion all of us in the food field could readily use more 'up-to-date' information along these lines.

"Many of our recommended control measures have failed to keep abreast of the increasing trend toward automation in production facilities. Most effective chemical selective insect toxicants, selective in their effect on insect life with a corresponding reduction of toxicity to warm-blooded animals is desirable. Techniques of applying such mythical insect toxicants to modern food

processing need to become more automatic with reduction in the necessary manual application."

Closing the Monday session Dr. George W. Fiero of Esso Standard Oil Co., New York, presented the report of the fourth annual insecticide industry survey covering sales for 1955. (Full details appear elsewhere in this issue.

Disinfectants Division

SUMMARIZING his paper, "Evaluation of Germicides as Virucidal Agents," Morton Klein of the Department of Microbiology, Temple University School of Medicine, pointed out:

"1.) The nature of viral infections will probably restrict the useful area of germicides to matters of sanitary control of human and animal infections.

"2.) Variation in the chemical structure of viruses indicates variation in their susceptibility to germicides, though there is not yet enough data to determine the extent of this variation in germicidal susceptibility. The uniform susceptibility of influenza virus and the frequent resistance of polio virus has been noted.

"3.) Probably the major problem in virucidal testing is obtaining satisfactory preparations of the test viruses. They should be high titer and reasonably free of an excess of organic matter. In many cases there will be a problem of achieving a uniform degree of organic matter, since one may start with an unknown amount of organic contamination.

"4.) If one has a satisfactory viral preparation the actual test procedures can be manipulated and patterned after bactericidal test procedures.

"5.) At the present time there are no standard virucidal test procedures. It is difficult enough agreeing upon the interpretation of bactericidal tests carried out in some uniform fashion. In the absence of any standards, interpretations become completely hazardous. There is an obvious need for the establishment of some standards for virucidal testing."

Soap Division

LABORATORY detergency tests should not be subjected to extrapolation beyond the purpose of screen," it was stated in a paper, "A Natural Soil for Detergency Screening Tests," by Robert C. Ferris and Lester O. Leenerts of Purex Corp., South Gate, Calif. In the paper, read by Mr. Ferris, the authors point out:

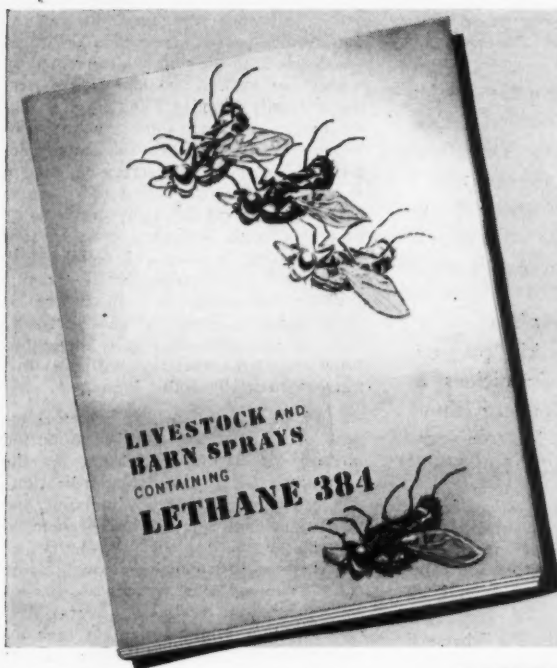
"Although the final analysis of the laundry performance of a detergent composition is ultimately determined in a practical washing machine type of test using family laundry bundles in a laboratory or through some type of consumer testing panel in the home, dependable methods for screening such a formulation in the laboratory are a necessity. Among the many problems of designing such screening tests is that of producing a standard soiled cloth which will give reproducible results. Further, screening tests should be as enlightening as possible and therefore have, as nearly as practically attainable, some expected correlation with the final tests on naturally soiled laundry."

"... To sacrifice the meaningfulness of tests which can be conducted on soils of natural derivation for the advantages of: (1) 'standardization', (2) perhaps better reproducibility and (3) knowledge of the soil's chemical content, leads to the possibility of grave errors in conclusions sought from such screening tests. In the absence of a commercially available 'natural dirt' soiled cloth it is far better for each individual laboratory to develop for its own use such a type so that the hazard of erroneous conclusions from 'artificial' soils can be avoided."

Automotive Division

C SMA's automotive division has struck its stride and is all set to carry on as an aggressive group, Dr. Harold G. Lederer of R. M. Hollingshead Corp., Camden, N. J., declared in calling the division's first session to order, the afternoon of May 21. A scientific committee has been appointed, he announced, which will take up various phases of standardization and develop specifications as the study indicates. A new task force has been organized which will study laws of some 40 states governing sale of anti-freeze products and review, also, scientific data. The marketing committee has completed another survey of brake fluids and in addition has made its first survey of the anti-freeze market. Other projects are being considered, giving assurance, he said, that members of the group will profit immeasurably from the division's activities.

John M. Clark, research executive, Studebaker-Packard Corp., Detroit, in his paper on "Automotive Chemicals from an Automotive Viewpoint," referred to the Los Angeles smog problem and said the automotive industry feels that it has a legitimate responsibility to work with authorities there in minimizing air pollution. One possible



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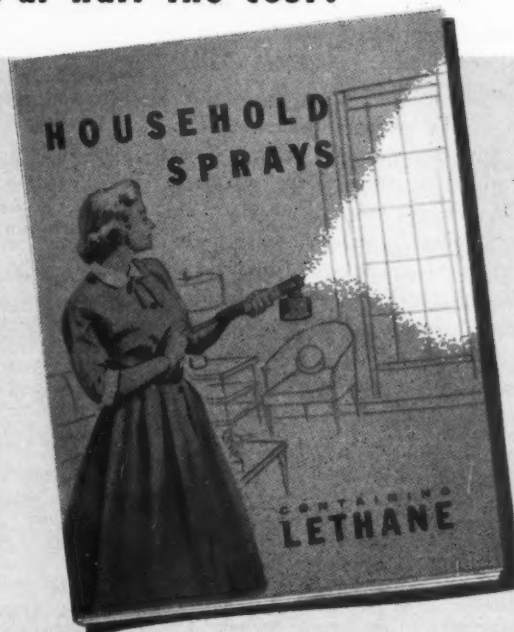
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solution, he said, might be some sort of a bumper attachment which would automatically oxydize car engine exhausts. He suggested that "you chemical manufactures might take this idea back to your research groups and kick it around."

In his formal paper Mr. Clark presented a "bird's eye" view of the automotive use of some chemical specialties and offered suggestions for improvement of hydraulic brake fluids, anti-freezes, protective coatings, car cleaners, cold solders and bonding materials.

Two technical papers were presented, one by John J. Singer, EDTA Products, Westboro, Mass., dealing with "Problems In Scale Removal," the other on "Development and Testing of Engine Degreasers," co-authored by Bernard Berkeley and Daniel Schoenholz of Foster D. Snell, Inc., New York and read by Mr. Berkeley.

J. D. Pickens, director of the Du Pont Co.'s Flint Laboratory, Wilmington, Dela., described the characteristics of two new Du Pont car finishes, the "Lucite" acrylic lacquer, and "Dulux 100" enamel. He assured his audience that neither product "will lead to the bankruptcy of the automotive polish business." He pointed out, however, the possible need for changes in automotive specialties to aid the car owner in maintaining the beauty and appearance of his automobile.

Robert L. Ackerly of Sellers & Connor, Washington, D. C., in reviewing "Trends In Brake Fluid Legislation," reported that, since December, three state legislatures have enacted laws to control brake fluid sales, bringing to eight the number of states where such statutes prevail. The uniform trend, he said, favors only heavy duty fluid, although Mississippi has approved a moderate fluid. Minnesota's law sets up no standards but the administrator is working closely with the industry and no problem exists in that state. In 1957, Mr. Ackerly said, 42 state legislatures will be meeting and considerable action can be anticipated on adoption of uniform code requirements.

Presentation of the division's brake fluid survey revealed that in 1955, 10,624,619 gallons of brake fluids were compounded by the 28 manufacturers responding to the questionnaire. C. E. Allderdice, Jr. of the Bell Co., Chicago, chairman of the project committee, said this represents about 90 percent of total production, which is much closer to a true picture of the industry's production than the 1954 survey gave, he said.

The 1955 figure, he continued, in-

CSMA Survey Covering Hydraulic Brake Fluid Compounded During 1955

	Number of Gallons	Percentage
1. Standard brand and private brand compounded which meet SAE Specifications:		
Moderate Duty 70R2 or R-72	2,845,014	26.8%
Heavy Duty 70R1 or R-71	5,681,525	53.4%
2. Gallons compounded which meet specific Government Specifications if not falling into Heavy Duty Category under (1 above)	321,392	3.0%
3. Standard brand and private brand compounded which do not meet either the SAE Specifications (1 above) or the Government Specifications (2 above)	1,776,688	16.8%
TOTAL	10,624,619	100.0%

dicates that 83.2 percent of the production conformed to SAE specifications or to government specifications and that only 16.8 percent of the production did not meet either of these specifications. One objective of the survey, he recalled, was to support opinions of many members that brake fluids which do not meet SAE specifications should be eliminated from the market as rapidly as possible.

"As everyone in the brake fluid industry knows," said Mr. Allderdice, "a much larger percentage of non-specification fluid was sold in the past. From this year's figures it appears that rapid strides are being made toward elimination of non-specification fluids."

A clarification of the goal and the reasons why the American Hotel Association has sponsored a project of establishing performance tests for cleaning and maintenance materials, including floor waxes and polishes, were outlined by J. S. Fassett, director of service and research of the A.H.A.

"The American Hotel Association believes it has found a new approach to the problem of establishing performance standards for cleaning and maintenance products, including, of course, floor waxes and polishes," Mr. Fassett stated. "By establishing an American Standards Association project which includes representation from manufacturer, consumer and technical organization, we believe that it may be possible to set up voluntary standards which are acceptable to all and which are based on the best available test methods."

"During the course of our testing and screening we have come upon many types of products for which generally acceptable standards and test methods were not available. In these cases we have been forced to use our own methods and standards. To be sure, they were always based on the best knowledge and experience we could find but in some cases the tests were not accep-

table equally to both your industry and ours. We have felt an urgent need for universal standards and test methods to be used in our testing and screening program. We have also found that most other institutional consumers have the same problem."

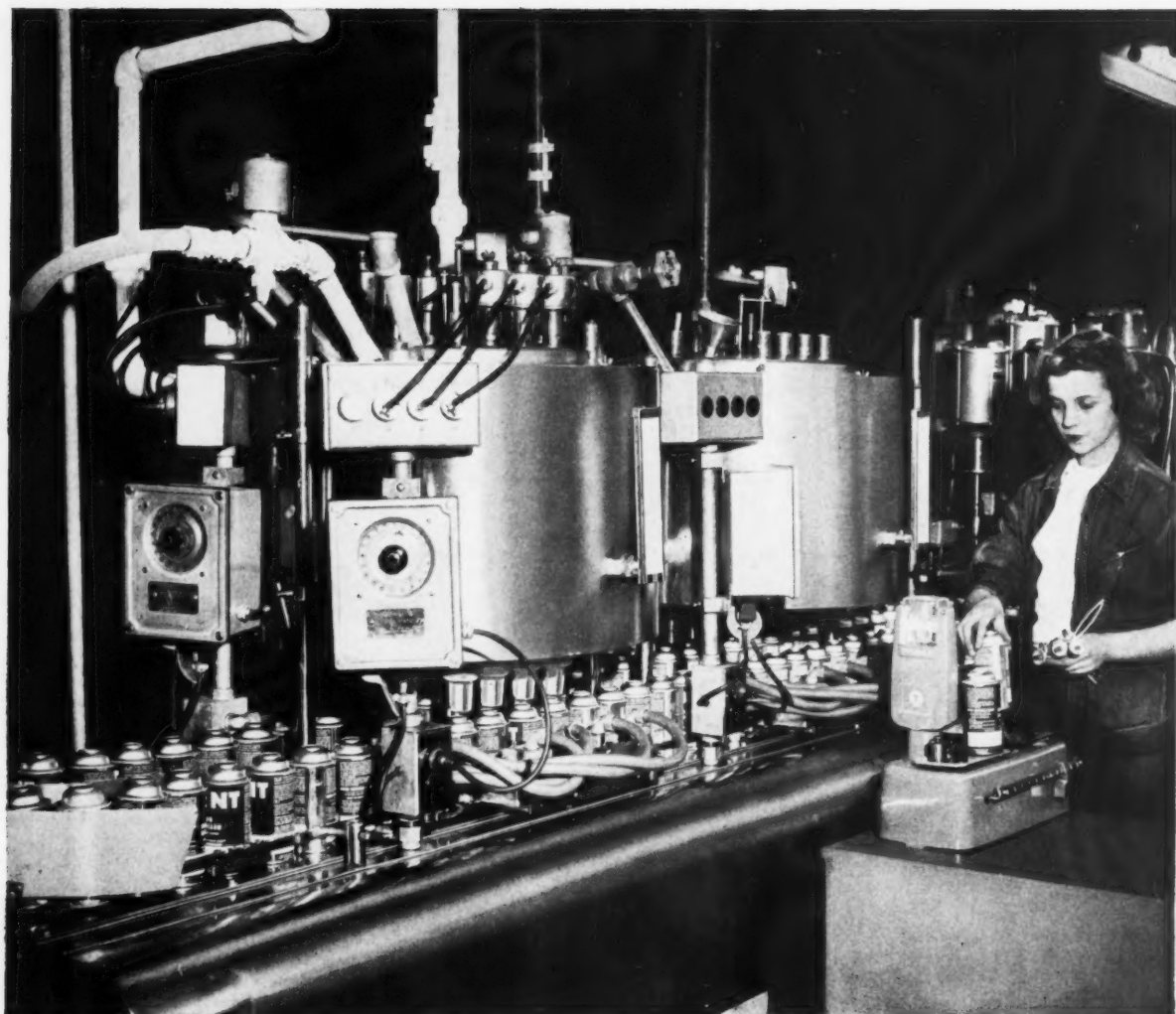
The heart of the AHA's new approach to performance standards, according to Mr. Fassett is "to gather the existing information and sit down around the table with interested parties in an attempt to use this information to set voluntary standards which are acceptable to all."

After reviewing the organizational meeting, last March 6, at which time six subcommittees were organized, each one responsible for the actual development of performance standards for such products as polishes, waxes, dishwashing, surface cleaning, etc., Mr. Fassett pointed out that it was not the job of the Sectional Committee or of any subcommittee to develop test methods. This apparently is a point on which there has been some misunderstanding. According to Mr. Fassett, "deliberations and decisions would have to depend on already existent methods made available by such organizations as CSMA and ASTM or individual companies or commercial testing laboratories."

Aerosol Division

A discussion of the "Application of Interstate Commerce Commission Regulations to the Shipment of Aerosols and the Enforcement of the Regulations" was presented by Harry A. Campbell, Chief Inspector, Bureau of Explosives, Association of American Railroads, New York, Mr. Campbell's paper was read during the Aerosol Division meeting the afternoon of May 22.

(Turn to Page 193)



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Pressure Packaging

(From Page 122)

voluntarily to the regulations, especially when most of the rules have been drawn up at the request of, and after consultation with aerosol marketers. Putting it bluntly, ICC has a big stick and the legal right to swing it, but would prefer voluntary compliance with its regulations rather than having to "get nasty" and enforce them with the stick.

Going "beyond the call of duty" in an effort to be fair and reasonable, Mr. Campbell even asked for an open meeting of the aerosol division's public regulations sub-committee to further explain ICC's safety program and the agency's willingness to work with individual companies in getting over the inconsistencies which have been cropping up in regard to adherence to ICC regulations. About forty people attended the open meeting of the public regulations sub-committee . . . gave Mr. Campbell a unanimous vote approving ICC policies.

From our standpoint, it's hard to understand the attitude of some aerosol producers when it comes to adhering to rules and regulations drawn up for their own well-being. The law is there to be obeyed at all times . . . to paraphrase a remark made before the 21st annual meeting of the Toilet Goods Association in New York City last month by John M. Fox, president of Minute Maid Corporation:

Integrity means acting no differently when the cop's head is turned than you would when his eye is squarely on you.

SPEAKING of press services, Connecticut Chemical Research Corp. popped into the news in a big way in mid-May with a New York City press party to introduce "Polysol," a new concept in the field of pressurized containers 10 times as far reaching as the already huge self-dispensing aerosol business.

"Polysol," according to

ConnChem's president, A. O. Samuels, is an extension of today's aerosol product to include use of a whole new range of propellants . . . helium, argon, krypton, carbon dioxide, nitrous oxide, butane, and propane . . . in place of, or supplementing, the fluorinated hydrocarbons on which aerosols have depended for the last decade.

Use of some of the gases, "either singly or in combination, and in certain products in combination with refrigerant gases," observes ConnChem, "opens up a great new vista in terms of products . . ." may make possible pressurized packaging of scores of products impractical with fluorinated hydrocarbons because of the latter's chilling effect, taste or odor imparted to the active ingredient, toxicity from an ingestion standpoint in food-stuffs, or drugs or cost. Frankly, ConnChem's press kit, while lengthy, left us a little confused and needs more technical clarification.

Actually, some of the gases ConnChem mentioned as new propellants already are being used. Nitrous oxide and carbon dioxide are the propellants in whipped creams and C. C. Lang's "Real Kool" soft drink concentrate which we discussed last month. Isobutane has been and is currently being used in certain aerosol products as we know them. Others, like xenon, krypton, and argon are no strangers to the chemical industry—they're found only in the atmosphere and for years have been by-products in very small quantities of air liquefaction processes.

ConnChem, Mr. Samuels told a press conference, had to work out, in addition to the chemical problems, the development of proper containers and coatings, as well as valves suitable to the type and form of sprays to be propelled from the Polysol products. Photographs included in the press kit showed models spraying mouth wash, depilatory lotion, and alcohol rub. The pictures, however, did not indicate the propellant used in the

packages—our guess, nitrous oxide and carbon dioxide.

While we don't profess to be chemists or physicists, we've done a little digging into standard chemical reference works in an attempt to analyze ConnChem's suggested gases as potential propellants. Their boiling points, we find, are as follows:

Krypton, minus 152.9°C.; Argon, minus 185.7°C.; Neon, minus 245.9°C.; Helium, minus 268.9°C.

Nitrous oxide has a boiling point of minus 89.5° C. Carbon dioxide has no boiling point in a true scientific sense, for it sublimates or changes directly from a solid to a gas without going through an intermediate liquid state. But the temperature of sublimation—a pretty accurate comparison with boiling point so far as propellant use is concerned—is minus 78.5°C.

Forgetting for a moment about nitrous oxide and carbon dioxide, which already are being used as compressed gas propellants in things like whipped cream, let's take a look at the practicability of ConnChem's suggestions from an aerosol propellant point of view.

First, those low boiling points for krypton, argon, neon, and helium preclude their use as liquefied gas propellants in anything but a heavy steel container built like a bank vault so far as thickness and strength are concerned. As compressed gases, their pressure at the 70°F. temperature range you have to consider in an aerosol product would be so high that you could include only a very, very small amount of gas in the light, inexpensive metal or glass aerosol package as we know it today.

(Saturation pressure of the gas at 70°F. for some of these proposed propellants gives an idea of their probable value in aerosol containers. Argon at that typical room temperature runs about 2650 pounds per square inch gauge; helium in the neighborhood of 2200-2400 pounds per square inch gauge. Dichlorotetra-fluoroethane, available



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from Du Pont as "Freon-114" propellant and from General Chemical as "Genetron-320," has a gas pressure of about 13 pounds per square inch gauge at 70° F., much more practical from an aerosol container standpoint.)

From the standpoint of volume of available gas for dispensing pressure, they're much more unsatisfactory than nitrous oxide and carbon dioxide. Like any compressed gas, they lack the advantage of continuous uniform dispensing pressure in the aerosol package, for their pressure would decrease steadily as the product was used, with the danger of running out of gas pressure before you could exhaust a reasonable amount of active ingredient from the aerosol package. Decreasing pressure also changes the spray pattern and character of product discharge in an aerosol, which adds further complications from a valve design standpoint.

The ability of a liquefied gas to maintain a steady uniform pressure so long as one drop of liquid is available for vaporization inside the aerosol package is the big thing that has made the fluorinated hydrocarbons like Du Pont's "Freon" and General Chemical's "Genetron" the propellant choice in aerosol products as we know them today.

Looking at the proposed propellants from a price angle, carbon dioxide currently is available in quantity as a compressed gas at about \$1.28 a pound. Argon runs around 90¢ per pound quantity, varying according to freight to point of use. Helium is priced "just a shade lower" than argon, according to our source.

But krypton, one of the world's rarest gases and existing as about one part per million in air, costs about \$3350 per pound in small quantities, "substantially less" in cylinders. In the past, it has been obtained by fractionation in air liquefaction processes; latest source is through radium fission but that source imparts radio-activity to the gas that would make it questionable for use as a propellant in aerosol

products. Krypton is still only in laboratory scale production.

Certainly Connecticut Chemical Research Corp. is to be congratulated on its generous expenditure of research effort and money to make possible new developments in aerosols. It is only through such forward thinking and willingness to experiment that new ideas become practical realities. The questions raised in connection with these new developments have occurred to us in attempting to evaluate their place in aerosols. We are hoping and expecting that ConnChem will be shedding more light on the subject soon.

NEWEST aerosol pharmaceutical item—and, to the best of our knowledge, the first push-button drug product approved for direct inhalation—is Riker Laboratories' "Medihaler" asthma relief spray. Now available from pharmacies through drug wholesalers, the three-piece package consisting of a pressurized bottle of medication, a plastic breathing tube applicator, and a plastic carrying case was pictured on the last-minute "Green Sheet" in May SOAP. Came in just as we were going to press so we didn't have a chance to give you the details, but here they are.

Small enough to be carried inconspicuously in the pocket, the product's big advantage rests in the measured dosage it permits, due largely to a metered valve by VCA, Inc., Bridgeport, which designed a special valve for product. No matter how long or how hard you press the valve, the dosage will be the same . . . good insurance from a medication standpoint.

More exactly described as a "nebulizer," the aerosol dispenser consists of a plastic breathing tube to which you attach a small replaceable vial of therapeutic agent combined with the liquefied gas propellant. When the end of the breathing tube is inserted in the mouth, the patient presses the valve and inhales . . . sweeping a mechanically measured and finely atomized

amount of the drug down the trachea. Holes in the breathing tube, near the valve, automatically mix air with the medicine.

Enough medicine to give relief to the average asthma sufferer on 200 occasions is included in the 10 cc. vial of medication. Two types of drugs currently are available—one formulation based on epinephrine and the other on isoproterenol, both short-acting sympathomimetic drugs . . . the epinephrine type is freely available, while the isoproterenol is a prescription-only item.

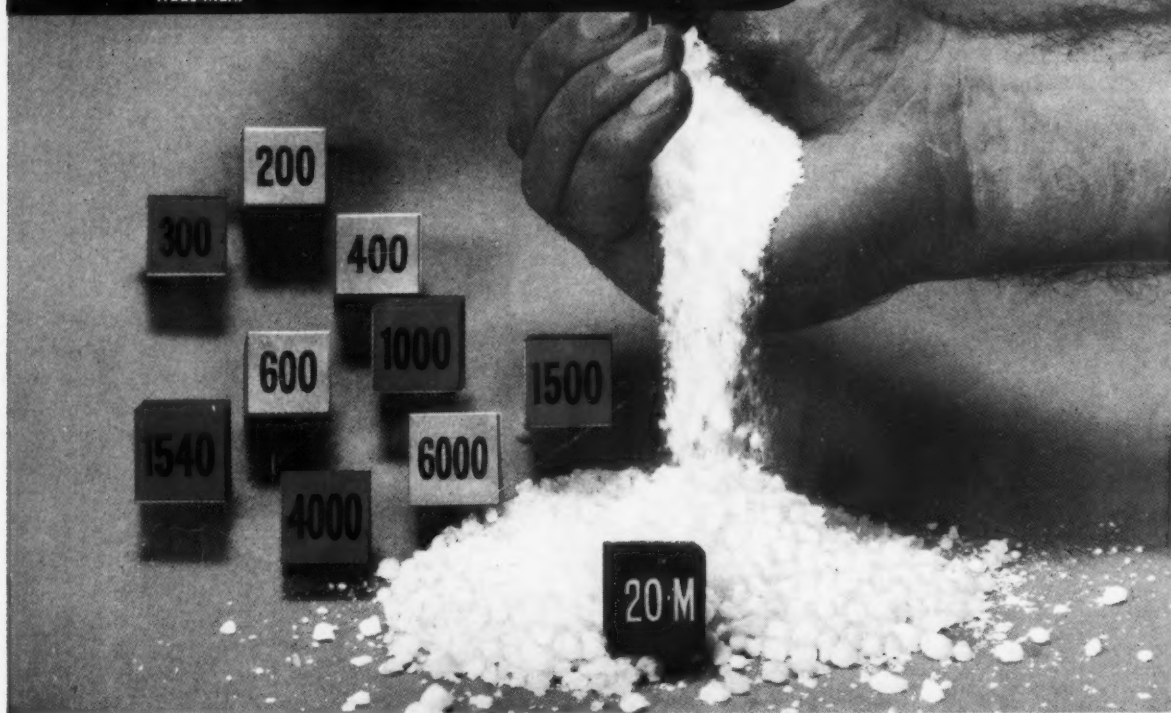
Riker Labs, whose main offices are located in Los Angeles, says "Medihaler" has FDA approval . . . gives full description and clinical details about the product in an attractive "ethical" pamphlet.

BRIEF takes: Have you seen Helene Curtis Industries' new combination offer on "Ultra Spray" Net hair spray? It's a two-piece package that should appeal to fastidious women—a six-ounce metal container of hair spray with a quarter-ounce glass dispenser that takes up scarcely any room in a handbag and enables the user to touch-up her hair-do on the spot. Take the spray head off the valve on the glass purse-size package and you can refill it quickly from the six-ounce can. Price: \$3.25 value for only \$1.85, plus 19¢ tax.

Du Pont's "Kinetic" Chemicals Division, in connection with the Chicago meeting of CSMA last month, offered a portable TV receiver to the person guessing closest to the number of people who've seen on television their aerosol movie, "The Spray's the Thing." Winner was Paul Silverman of Helene Curtis Industries, whose guess of 17.3 million compared with 17,713,215 recorded by Du Pont's TV booking agency, Association Films, Inc., between August 1955 and May 1, 1956. Silverman was top guesser among 200 people in the contest, which was sponsored by Kinetic.

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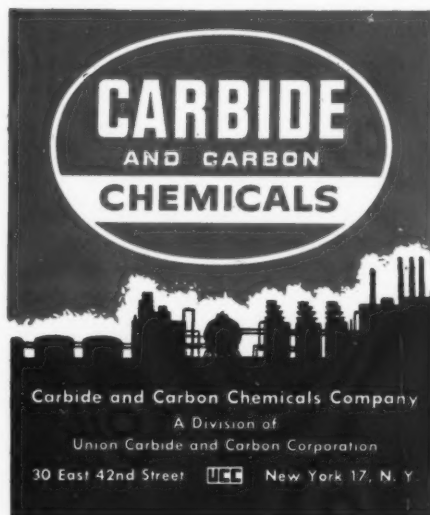
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SOAP and CHEMICAL SPECIALTIES

Non-Flammable Paint Strippers

PART II

THE development of non-flammable paint removers by industry has augmented government research. However, there has not been any action on the part of manufacturers to publish their findings in technical journals. Therefore, novices in the field of paint removers have to lean heavily on industrial bulletins issued by basic raw material suppliers. These brochures tend to be limited to recommendations which describe the suppliers' products. Nevertheless, the disclosures are valuable for their over all contribution to our present store of information.

A typical composition of a flush-off stripper suggested by a major solvent supplier (8) is described below:

Methylene chloride	71 gals.
Toluene*	3 gals.
Methanol	12 gals.
Di-triisopropanolamine	9.5 gals.
Water	1.5 gals.
Methyl cellulose, 4000 cps.	13 lbs.
Areskap 100 (Monsanto Chemical Co.)	33 lbs.
Potassium oleate	22 lbs.
Paraffin, 122-124° F.	16.5 lbs.
Triethylammonium phosphate,** 40% in ethyl alcohol (Monsanto Chemical Co.)	0.5 gals.
* 6.0 gals. of VM & P Naphtha can be substituted for the toluene.	
** Corrosion inhibitor to improve storage life in tin plated containers.	

A partial list of solvents tried with methylene chloride in the above formulation was compiled. The list is divided into two groups: Group I includes flammable solvents and Group II includes non-flammable solvents. The flammable solvents have flash points ranging from 10°F. or less up to 185°F. The non-flammables shown do not

have a flash point. Other solvents, which were tested were not included in the table for reasons of toxicity, reactivity, solubility, etc.

The following general remarks can be made concerning these

Solvents Tried with Methylene Chloride in Paint Removers

Group I, Flammable

1. Isopropyl chloride
2. Acetone
3. Methyl acetone
4. Ethylidene dichloride**
5. Cyclohexane
6. Toluene
7. Benzene
8. Propylene dichloride
9. Ethylene dichloride
10. Methanol
11. Ethanol
12. Ethyl benzene
13. Propylene glycol methyl ether
14. Monochlorobenzene
15. Diethyl benzene
16. Orthodichlorobenzene
17. Dipropylene glycol methyl ether
18. Dichloroethyl ether
19. Dichloro isopropyl ether
20. Tripropylene glycol methyl ether

Group II, Non-flammables

1. Carbon tetrachloride*
 2. Trichloroethylene
 3. Perchloroethylene
 4. Methyl chloroform**
 5. Acetylene tetrabromide***
 6. Tetrachloro ethane***
 7. Trichloroethane
- * Toxic vapors.
 ** Reactive with aluminum.
 *** Strong, lasting odor.

solvents as methylene chloride diluents or substitutes:

1. None of them, by themselves, is as effective as methylene chloride.

2. With few exceptions, the use of more than 15 to 20 per cent of these solvents will reduce the efficiency of the finished remover. More acetone or methyl acetone will not appreciably alter the effectiveness, but will increase the flammability.

3. If non-flammability is desired, low flash point solvents should be kept to a minimum (less than 10 percent). The percentage can be revised upward as the flash point of the solvent increases.

Some of the solvents may be objectionable from standpoints other than effectiveness and flammability. A few of these objections are noted in the table.

Many of these solvents are currently being used with methylene chloride in commercial paint removers. Some of the solvents may cause incompatibility of other constituents in the remover. The components affected are usually the methyl cellulose, wetting agent and soap. This can usually be overcome by changing to a soap or wetting agent found to be soluble in the solvent system. Since there are a

By Bernard Berkeley and Daniel Schoenholz

Product Development Department

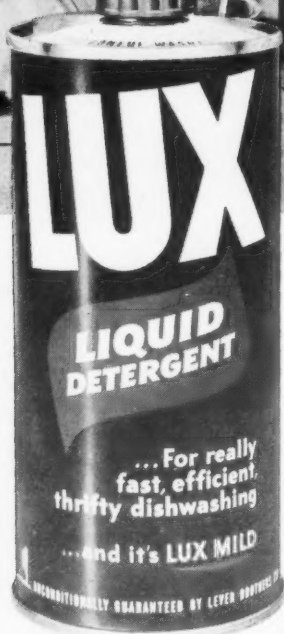
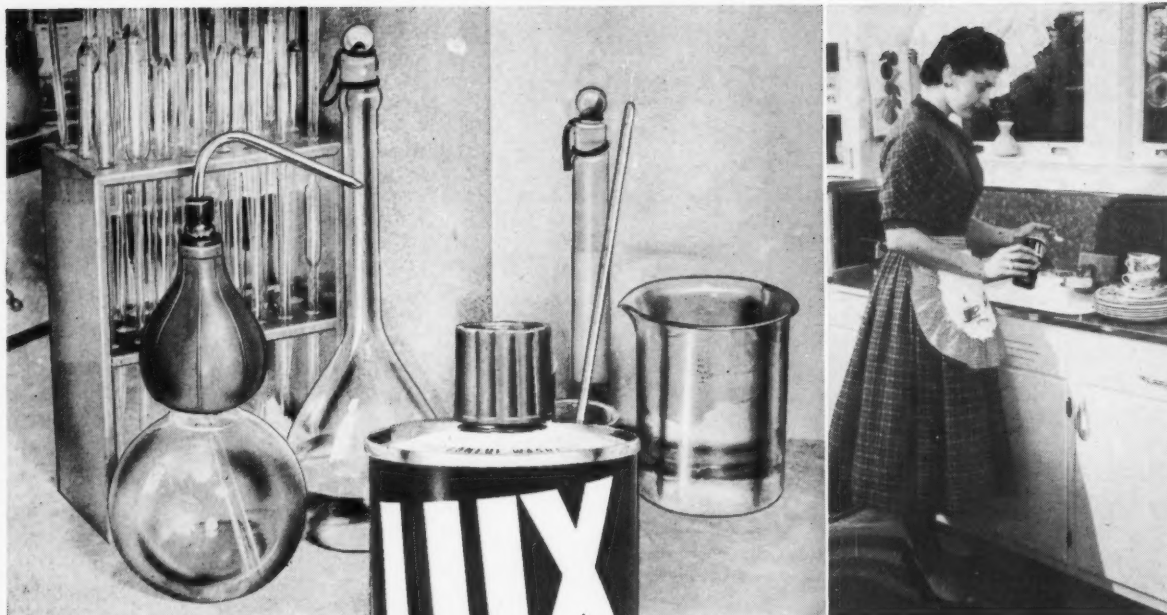
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wide variety of surface active materials on the market, this is not difficult. If the methyl cellulose is thrown out of solution, altering the methanol-thickener ratio will usually bring about one-phase solution.

Scrape-off formulations have likewise undergone changes over the years, particularly with regard to type of thickener. Examples of compositions (9) which yield very good stripping properties are outlined in table at right:

Superior performance is claimed for "Methac," (10) a proprietary blend of methanol and methyl acetate, in the composition given as follows:

Percent by Weight	
Ethyl cellulose K-5000,	1.0
Methylene chloride	82.5
Methac solvent	15.0
Paraffin wax, 125°F.	1.5
	100.0

Within the last two years, considerable interest has been shown in aerosol packaging of paint removers. Suggested formulation is illustrated below:

Constituent	Composition—Wt. %
Methylene chloride	25
Genetron 12	25
Acetone	20
Trichloroethylene	15
Methanol	10
AC polyethylene 629*	5

* AC Polyethylene 629 is a white wax-like polymer with a melting point in the range of 208–212°F. The outstanding characteristic is the remarkably stable clear emulsion which may be prepared even at high solids content.

Patent Literature

TECHNICAL information dealing with non-flammable paint removers is concentrated largely in patent disclosures. In view of the otherwise sparse information on the subject we have elected to present a complete chronological compilation of pertinent and related patents, in the form of condensed summaries.

US 817,141 4/3/1906 C. Ellis (Chadeloid Chemical Company)—Waxes as evaporation retarders for non-flammable solvents. CCl₄ plus alcohols and esters. Beeswax, ceresin, paraffin used. Ceresin preferred.

US 1,014,752 1/16/1912 C. Ellis (Chadeloid Chemical Company)—Aqueous

Parts by Weight				
Methocel, 4000 cps.	1	—	—	—
Ethyl cellulose K-5000+	—	1	—	—
Cellulose acetate TH-4	—	—	1	—
Cellulose acetate WH-2	—	—	—	1
Methylene chloride	91.5	91.5	91.5	91.5
Paraffin wax (m.p. 125°F.)	1.5	1.5	1.5	1.5
Methanol	6.0	6.0	6.0	6.0
	100.0	100.0	100.0	100.0
Solution characteristics	Hazy,	Gels	Clear	Clear
Viscosity, Gardner-Holt	<A	<A	<A	<A
Loss by Evaporation, %	3.0	3.7	8.9	1.33

soln. of choral hydrate and combinations with sodium salicylate. Example: choral hydrate 8 lbs., ammonium sulfricinate 4 oz., 1 gal. H₂O, 2 lbs. wood flour, ½ lb. sodium salicylate. Mentions as evap. retarders: sulfoleates.

US 1,069,057 7/29/13 C. Ellis (Chadeloid Chemical Company)—Combinations of allyl alcohol 40 pts. CCl₄ 10 pts., ceresin 2 pts., paraffin wax 1.0 pt. Aniline mentioned as inhibitor for hydrolysis of chlorinated solvent. Thickeners: flour, starch, wood flour, whitening, fullers' earth, magnesite, infusorial earth.

US 1,051,318 1/21/13 C. Ellis (Chadeloid Chemical Company)—Solvent naphtha 40 pts., petroleum naphtha 10 pts., CCl₄ 10-20 pts., allyl alcohol 30 pts., benzyl alcohol 10 pts., waxy stiffening material 5 pts.

US 1,130,499 3/2/15 C. Ellis (Chadeloid Chemical Company)—Dimethyl phthalic ester 40 pts., dichloronaphthalene 10 pts., ethyl alcohol 20 pts., trichloroethylene 25 pts., celluloid 5 pts., fractionated hard paraffin wax 1 pt.

US 1,145,365 7/6/15 H. A. Harris (New Era Remover Company)—Use of non-wax solvents. Example: Carboic acid 10%, candelilla wax 2%, paraffin wax 1%, acetone or alcohol 87%.

US 1,145,980 7/13/15 C. Ellis (Chadeloid Chemical Company)—Acetylene tetrachloride 40 pts., light oil of camphor 25 pts., denatured alcohol 35 pts., ceresin wax 2 pts.

US 1,156,119 10/12/15 G. Whigelt—Chlorinated acetylene (dichloro-trichloro-perchloroethylene, pentachloroethane), chlorinated derivative of glycerol or glycol (mono-, di- and epichlorohydrin); coal or petroleum distillates (turpentine substitutes, paraffin oils); metallic soaps (aluminum stearate and palmitate) as thickeners.

US 1,169,783 2/1/16 C. Ellis (Chadeloid Chemical Company)—Benzyl alcohol 30 pts., benzyl acetate 25 pts., cresylic acid 5 pts., high boiling coal tar solvent naphtha 40 pts., CCl₄ 15 pts., hard paraffin wax 5 pts.

US 1,172,772 2/22/16 C. Ellis (Chadeloid Chemical Company)—Chlorinated solvent (pentachloroethane, te-

trachloroethylene), alcohols (methyl, ethyl), celluloid, wax, soap, sodium benzoate.

US 1,328,080 1/13/20 C. Ellis (Chadeloid Chemical Company)—Phenol, solvent, glycerin, wax, water. Use of glycerin with carboic acid neutralizes corrosive action on skin.

US 1,406,175 2/14/22 C. Ellis (Chadeloid Chemical Company)—Wax, tetrahydronaphthalene and alcohols (cyclohexanol and/or benzyl alcohol) with or without chlorinated solvent.

US 1,499,101 6/24/24 C. Ellis (Chadeloid Chemical Company)—Contains general background info on relationships between solvents as regards stripping action and flammability. Trichloroethylene with diacetone alcohol, ethyl acetate and wax. Relatively lengthy patent.

US 1,596,413 8/17/26 C. Ellis (Chadeloid Chemical Company)—Furfural, monochlorobenzol, wax.

US 1,884,773 10/25/32 B. Lougovoy (Chadeloid Chemical Company)—Non-benzolic type - chlorinated hydrocarbon, wax, wax precipitant. Stripping data given for various solvents.

US 1,884,765 10/25/32 B. Lougovoy (Chadeloid Chemical Company)—Alkali polymerized acetone, chlorinated solvent, alcohol and waxy material.

US 1,918,224 7/11/33 M. M. Wilson (Sharples Solvents Corporation)—Amylene dichloride, a phenol, alcohol, toluol.

US 1,938,714 12/12/33 L. E. Mills, S. W. Putnam (Dow Chemical)—Example: orthodichlorobenzene 1 pt., propylene dichloride 3 pts., benzene 1 pt., carbon tetrachloride ½ pt., and acetone ½ pt.

Can. 367,059 6/29/37 — CH₂Cl₂, 77.5%, alc. 10%, toluene 2.5%, benzene 2.5%, cellulose acetate 2.5%, paraffin 5%.

Brit. 485,857 5/20/38 — A filling agent in the form of scales or leaves, e.g., talc, fish scales, BiOCl, graphite, is used to form a skin in paint removers cont. methylene chloride, one or more other org. solvents and film forming agents. Among 14 examples,

1
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the ingredients are (1) methylene chloride, AcOMe, MeOH, scrap celluloid and talc. and (2) methylene chloride, AcOMe, PhMe, crepe rubber and talc.

Brit. 492,320 9/19/38—Polyacrylate esters suggested as thickeners for organic solvents.

Brit. 493,765 10/10/38—Mixtures of org. solvents, e.g., C_6H_6 , tetralin, EtOH, methylene chloride plus an alkali earth metal, Mg, Al or Zn alcoholate (at least 6 C atoms in mol.).

US 2,176,995 10/24/39 G. F. Hoffman (Pittsburgh Plate Glass Company)—Acetyl chloride in methyl ethyl ketone and/or mixtures with benzol and paraffin. Action is one of attack by acyl halide which later generates gas.

US 2,200,709 5/14/40 (Rohm & Haas)—Organogels used with paint removers etc. copolymer of styrene and methyl acrylate in org. liquid forms gels.

US 2,207,967 7/16/40 (DuPont)—Alk. earth metal stearate in liq. aromatic hydrocarbon to form slurry. Mix hot and add beeswax and ceresin plus lacquer solvent.

US 2,327,701 8/24/43 C. Ellis (Chadeloid Chemical Company)—Describes the use of nitrated paraffin and chlorinated wax to improve evaporation retardation. Whereas paraffin yields films which are crystalline and brittle, admixture with nitrated paraffin results in plasticized continuous film. Includes general behaviour of retarders.

US 2,346,622 4/11/44 L. V. Steck (Shell Development Company)—2-chloro-2-butene, 40.4%, Me CO Et. 21.0%, acetone 18.5%, MeOH 16.7% plus paraffin wax 3.4% by wt.

US 2,388,082 10/30/45 J. C. Roediger (Standard Oil Development Company)—Non-toxic containing oil sol. component to penetrate and soften paint or varnish. Oil sol. component comprises a primary, secondary or tertiary amine containing at least 8 C atoms to the mol. From 3-10% of this compound is dissolved in mixture of aliphatic alc. (3-5 C atoms), a non-toxic hydrocarbon solvent and small amt. paraffin or vegetable wax.

US 2,393,798 1/29/46 J. D. Morgan and R. E. Lowe (Cities Service Oil Company)—Nitropropane 15, n-methylamyl ketone 15, oleic acid 10, TEA 4.3, pine oil 2 pts. by vol. Used either as a paste or in H_2O to form an emulsion.

US 2,398,242 4/9/46 J. D. Morgan and R. E. Lowe (Cities Service Oil Company)— H_2O 10, MEA 10, kerosene 20, 1-nitropropane 30, oleic acid 10, isopropyl alc. 20% by vol. Not corrosive to Al or its alloys, steels or other metals.

US 2,407,149 (Thomas A. Edison, Inc.)—Use of addn. of monohydric, polyhydric, primary, secondary, or tertiary alcs., $CHCl_3$, or any primary secondary or tertiary amine with 2-chloro-2 butene.

US 2,418,138 4/1/47—Acetone 53.5

ethylene chloride 25.0, water 10.0, lactic acid 3.5 (this greatly increases effectiveness) paraffin wax 1.0, cellulose acetate 3.0, sulfonated castor oil 3.0 and diamyl amine phosphate 1.0 all by wt.

US 2,433,517 12/30/47 L. E. Kuentzel (Wyandotte)—Mixing chlorinated hydrocarbon solvents (e.g., methylene chloride, ethylene dichloride, dichloropentane, trichlorobenzene) with 5-20% of an org. amine (e.g., $BuNH_2$, iso- $BuNH_2$, iso- $PrNH_2$, piperidine, Me_2N). Effectiveness enhanced by use of water (25% or less), a suitable thickener (e.g., methyl cellulose or bentonite), or minor amts. of a wetting agent (e.g., Aerosol AS or Tergitol 4). Numerous formulations and tabulated performance data are given.

US 2,443,173 6/15/48 (Turco)—Removers having thixotropic properties prepared by incorporating in chlorinated solvent (methylene chloride, trichloroethylene, dichlorobenzene, dichloro diethyl ether) (1) protein colloid (casein, zein, soybean meal), (2) dispersion stabilizer (soaps, or fatty or rosin acid), (3) dispersion assistant (phenol or cresylic) (4) water (5) mutual solvent (EtOH, $PrOH$, ethylene glycol and its mono ethers. Addition of amines (e.g., cyclohexylamine, TEA, pyridine) improves action.

US 2,438,038 3/16/48 J. K. Craver (Monsanto Chemical Company)—Use of aqueous solutions of gamma-valerolactone and gamma-butyrolactone plus wetting agent.

US 2,437,964 3/16/48 (Monsanto Chemical Company)—1-10% thickening agent (cellulose acetate or nitrate or paraffin wax, in diethyl phosphite.

US 2,447,052 8/17/48 (Pure Oil Company)—10-20% bentonite to aq. slns. containing 5% or more NaOH or KOH to form gel. Preferably, the compositions also contain substantial amounts cresols, naphthenic acids, per, oxidat. prod.

US 2,479,628 8/23/49 L. E. Kuentzel (Wyandotte)—Monobutyl ethers of mono- or polyethylene glycol 5-10 pts. and alk. salts 3 pts. are essential ingred. of concentrate, which exists as a 2 phase mixture until diluted with H_2O prior to use:

$Na_2SiO_3 \cdot 5H_2O$ 18.75, Na_2CO_3 7.5, $NaHCO_3$ 6.75, $Na_2S_2O_3 \cdot 5H_2O$ 3.75, C_{12-20} alkyl sulfonate wetting agent 0.75, and ethylene glycol monobutyl ether 62.5% when diluted before use to a 9% aq. solution.

US 2,479,629 8/23/49 L. E. Kuentzel (Wyandotte)—Incorporate 15-20% of Na (or K) xylenesulfonate in the form of a 40% aq. solution to the 2 phase paint remover conc. to render it uniform.

US 2,493,676 1/3/50 (A. E. Staley)—Pseudo esters of levulinic acids claimed to be good paint removers.

US 2,495,729 1/31/50 (Celanese)—Contains besides usual solvents, paraffin wax, benzene, wetting agent and

a film forming substance such as cellulose nitrate, acetate, propionate, butyrate, acetopropionate or acetobutyrate as well as cellulose ethers.

US 2,507,983 5/16/50 L. E. Kuentzel (Wyandotte)—The first of a series of three related patents in which the general requirements for rapid acting and thixotropic paint removers are outlined. Chlorinated aliphatic solvents are activated by small amounts of selected acids and water. The amount of water should be no greater than that which is capable of going into solution with the remaining ingredients of the mixture to avoid decreasing stripping efficiency. Thixotropic properties are attained by the use of methyl cellulose and a blending agent such as alcohol. Additional ingredients include evaporation retardant such as paraffin wax; and wetting agents, such as "Santomerse D" and "Wetsit Concentrated". The only claim given is as follows: "A paint remover having thixotropic properties and consisting of the following ingredients present in approximately the respectively listed proportions by weight:

Per Cent by Weight	
Methylene chloride	85.78
Paraffin	2.57
Methyl cellulose	0.95
Acetic acid (glacial)	0.63
Formic acid (90%)	0.77
Methanol	6.10

and the balance dodecylbenzene sodium sulfonate, the latter sulfonate containing sufficient water which together with the water content of said formic acid ingredient, is equal to 0.717% of the total composition."

US 2,507,984 5/16/50 L. E. Kuentzel (Wyandotte)—Discloses the use of water and organic acids as activators for methylene chloride. Covers formic, acetic, propionic, salicylic, butyric, carbolic, benzoic and cinnamic acids in the range of 0.1 - 50%; water in the amount of 0.01 - 6.0% all by weight. Stripping data given for various acids and water with methylene chloride. Three examples of complete formulations given, the most efficient being:

Per Cent by Weight	
Methylene chloride	80.96
Paraffin wax	2.43
Methyl cellulose (1500 cps.)	0.61
"Wetsit Concentrated"	3.03
Water glass	0.85
Phenol (solid)	12.12
	100.00

US 2,507,985 5/16/50 L. E. Kuentzel (Wyandotte)—Only a few chlorinated solvents respond to the activating influence of acid, or of water and an acid. Test data and formulations are given in support of statement.

The only claim is as follows:

"A paint remover composition consisting essentially of a solvent selected from the group consisting of methylene chloride, ethylene dichloride, 1,1,2-trichloroethane, 1, 1, 2, 2-tetrachloro-

ethane, chloroform and ethylene chlorhydrin; 0.1 - 50% by weight of a mixture of approximately equal parts of 90% concentration formic acid and 100% concentration acetic acid, and 0.01 - 6% by weight of water."

US 2,531,825 11/28/50 E. P. Peterson and O. P. Muller (National Lead Company) — Describes cation-modified clays formed from bentonitic and montmorillonite clays and onium bases such as octadecyl and dodecyl amines. The organophilic thickeners are used with paint remover solvents.

US 2,548,766 4/10/51 (Turco) — Non aqueous remover with thixotropic properties. Uses protein colloid, e.g., casein, mixed with organic amine and some soap and phenolic salts as dispersants. To mixture, add chlorinated solvent and alcohol to yield thixotropic qualities.

Ger. 805,502 5/21/51 W. Wolff, F. Oschatz and A. Burgard — Acetals of 1, 4-butanediol are suitable solvents for paint removers.

US 2,566,298 9/4/51 (Standard Oil of Indiana) — Contains alkali sulfonates, aromatic hydrocarbon, chlorinated hydrocarbons, cresylic acid, aliphatic alc., org. acid, and amine example: Na mahogany salt (MW 400-414) 15-28%; hydroformer bottoms (b 400-600° F.) 12-20%, C₆H₅Cl 25-35%; cresylic acid 10-20%; iso-PrOH 3-7%; naphthenic acid 3-10%; H₂O 3-6%; HOC₂H₄NH₂ 0.25-1.0%.

US 2,581,050 1/1/52 T. H. Smedslund — Dimethyl sulfoxide can be used as a paint and varnish remover.

US 2,619,468 11/25/52 F. Zumbrunnen — A paint remover having the following composition: acetone 20.5-30.3, AcOMe 15.4-24.2, trichloroethylene 10.2-18.2, 1,2-dichloroethane 12.8-21.2, mesityl oxide 20.5-30.3%, cellulose acetate, Turkey-red oil, starch and water.

US 2,630,409 3/3/53 W. M. Bruner and J. C. Lehr (E. I. du Pont de Nemours & Company) — 1,1,2-trimethoxyethane (TME) alone and in combination with other solvents makes a paint and varnish remover. Oxalic acid has marked activating action on TME. Ethyl cellulose is a suitable thickener. Combinations with ethylene dichloride were very efficient.

References

8. Dow Chemical Company bulletin on methylene chloride dated 1953.
9. Private communication from Hercules Powder Company, Wilmington, Delaware.
10. Bulletin M15A, 1955, American Monomer Corporation, Leominster, Massachusetts.
11. Kinetic Technical Memorandum No. 16, E. I. du Pont de Nemours & Co., Inc., Wilmington, Delaware.

Ethyl Alcohol Price Up

A three cents per gallon increase in the drum price of pure ethyl alcohol, 190 proof, now in ef-

fect, was announced recently by U. S. Industrial Chemicals Co., New York. The drum price of "Sol-ox," proprietary solvent, specially denatured and completely denatured formulas, as well as all grades of anhydrous, were increased three cents per gallon uniformly in every quantity bracket. All tank car and tank truck prices of ethyl alcohol, which includes all formulas, remain unchanged. This is the first increase in the differential between tank cars and drum carloads in several years, despite steadily increasing costs for drums, handling, filling and transportation, according to U. S. I.

Soap Improvements

(From Page 52)

- 2,232,544 and 2,262,950.
26. McCutcheon, J. W. "Soap by Saponification." *J.A.O.C.S.*, November, 1952.
 27. Hedley Technical Department: "The Victor Mills Continuous Soap Process." *S.P.C.*, November 1947.

Carbon Soil Removal

(From Page 44)

which we are advancing is illustrated in Fig. 5. The theoretical equivalent of sodium tripolyphosphate for various Ca⁺⁺ water hardness is given by the straight line (7). The values for the "breaks" in the detergency curves of Fig. 3 are marked on this chart as circles. The square indicates the phosphate ceiling value of towel tests for 360 ppm. This value is clearly excessive for 120 ppm. The experimental points are in reasonable agreement with the theoretical line, although one would expect that more phosphate than the theoretical amount would be required.

In synthetic detergent mixes the primary function of phosphate is to soften the water. The ratio of detergent to phosphate required for optimum washing is determined by the amount of hard water used. This relationship holds for the anionic detergents whose calcium salts are highly soluble. Where their salts are insoluble (e.g. soaps and

high molecular weight sulfates and sulfonates) then, the phosphate required is a sufficient excess to prevent precipitation of the detergent. In general this amount of sequestrant will also prevent soil redeposition and give the highest detergency (1,8).

Conclusions and Summary

1. Increasing amounts of water hardness have an increasing negative effect on detergency. This effect is large.

2. The negative effect of hard water on detergency is similar to its effect on soil redeposition. The primary function of TPP in detergent mixes is to suppress the effect of water hardness.

3. In distilled water, increased concentration of TPP does not increase detergency for a concentration of ABS above the c.m.c.

4. The addition of TPP to ABS in the presence of hardness corrects the effect of depressed detergency raising the measured value almost to that obtained in distilled water. This relationship between phosphate and water hardness appears to be stoichiometric and is independent of the amount of anionic detergent present above the c.m.c.

5. The amount of TPP required to obtain the highest possible detergency in these simple systems is dependent upon the amount of hardness present. Further additions of TPP beyond the amount necessary to soften the water do not increase detergency.

References

1. P. T. Vitale, *J. Am. Oil Chemists Soc.*, 31, 341 (1954)
2. J. A. Woodhead, P. T. Vitale, A. J. Frantz, *J.A.O.C.S.* 21, 333 (1944).
3. W. E. Thompson, *J.A.O.C.S.*: 26, 509 (1949).
4. W. C. Preston, *J. Physics and Coll. Chem.* 52, 84 (1948).
5. J. Powney and R. W. Noad, *J. Text Inst.*, 30, T 157 (1939).
6. J. Ross, P. T. Vitale and A. M. Schwartz, *J. Am. Oil Chem. Soc.*, 32, 200 (1955).
7. J. Ross, L. Shedlovsky, C. W. Jakob, *J.A.O.C.S.* 32, 126 (1955)
8. G. D. Miles, J. Ross, *J.A.O.C.S.* 22, 23 (1947).

New Patents

(From Page 88)

acid and 2,4,5-trichlorophenoxyacetic acid, said concentrated solvent solution containing at least four pounds of equivalent acid as the ester per gallon of solution.

No. 2,738,332. Process of Treating Soap Particles, patented by Russell Edward Compa, Bogota, N. J., assignor to Colgate-Palmolive Co. Disclosed is a process which comprises spraying on the surface of preformed water-soluble soap particles with the aid of agitation an aqueous solution of a water-soluble salt of a higher fatty acid monosulfate monoglyceride and drying the particles whereby the tendency of soap particles to form lumps when poured into heated water is reduced.

No. 2,739,942. Detergent Compositions, patented by Eddy W. Eckey, Wyoming, Ohio, assignor to The Procter and Gamble Co., Ivorydale, Ohio. The patent covers a cleansing composition consisting essentially of one part of an organic detergent of the group consisting of water-soluble soaps, non-soap-anionic synthetic detergents, non-ionic synthetic detergents, and mixtures thereof, and a building amount, in the range of from about one-fifth part to about fifteen parts, of a water-soluble phytate, said composition having a moisture content such that the total concentration of the detergent plus phytate is not less than about 40%.

No. 2,739,943. Detergent Composition, patented by Homer W. McCune, Cincinnati, Ohio, assignor to The Procter & Gamble Co., Cincinnati, Ohio. Disclosed is a heavy-duty liquid synthetic detergent containing primary sodium alkyl sulfate, in which the alkyl radical has 10 to 14 carbon atoms, in amounts of 8 to 22½ parts, sodium phytate in amounts of 8 to 22½ parts, sodium silicate solids, 2½ to 5 parts sodium octyl sulfate, 2 to 4 parts, an ether of ethylene glycol selected from the group, consisting of monopropyl ethylene glycol ether, monoamyl ethylene glycol ether and monobutyl ethylene glycol ether, 2 to 4 parts, all of these in a single phase solution in water to make 100 parts.

No. 2,740,760. Pumpable Potassium Soaps, patented by Frank Pilch, Chicago, Ill., assignor to Armour and Co., Chicago, Ill. The patent covers a fluid soap material comprising potassium salts of resin and higher fatty acids contained in a mixture of resins and higher fatty acids having a saponification value of about 150 to 200 and a resin acid content of 20 to 90 per cent by weight, in admixture with 4 to 10 per cent by weight of free acid calculated as oleic acid and 15 to 22 per cent moisture.

No. 2,741,115. Herbicidal Composition, patented by John C. R. Warren, Elmira, Ontario, Canada, assignor, by mesne assignments, to The Dow Chemical Co., Midland, Mich. A concentrated herbicidal composition

consists of matter which will not freeze at temperatures as low as 0°C. and which comprises from 5 to 65% of a liquid hydrocarbon and correspondingly from 95 to 35% of a mixture of the n-butyl and isobutyl esters of 2,4,5-trichlorophenoxyacetic acid in proportions of from 30 to 70% of said n-butyl ester and correspondingly from 770 to 30% of said isobutyl ester. The first-named percentages are by weight based on the sum of said hydrocarbon and the mixture. The last-named percentages are by weight based on the sum of the esters.

N. 2,741,116. Concentrated Herbicide Compositions, patented by James H. Fookes, Hope, Mich., assignor to The Dow Chemical Co., Midland, Mich. Described is a concentrate composition comprising as an active herbicidal toxicant a mixture of the normalbutyl ester of 2,4,5-trichlorophenoxy-acetic acid and the isobutyl ester of 2,4,5-trichlorophenoxy-acetic acid, said normalbutyl ester comprising from 30 to 70 percent by weight of the combined weight of said normalbutyl and isobutyl esters present in the composition.

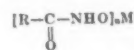
No. 2,742,434. Cleaner-Sanitizer, patented by Marvin Kopp, Jersey City, N. J., assignor to General Aniline & Film Corp., New York, N. Y. A cleaner-sanitizer is covered in the form of a dry, free-flowing, powder comprising 10 to 35 parts of a water-soluble nonionic detergent, 0.5 to 5 parts of a water soluble quaternary ammonium detergent germicide, 0.001 to 0.2 part of a stilbene sulfonate brightening agent, and 50 to 85 parts of inorganic alkali metal detergent added.

No. 2,742,436. Preparation of Non-Dusting Organic Detergent Composition, patented by Russell L. Jenkins, Webster Groves, Mo., assignor to Monsanto Chemical Co., St. Louis, Mo. The patent teaches a method of preparing a substantially non-dusting detergent, having a M. A. S. dust value of less than 1000. The process comprises spray drying an aqueous composition containing a normally-dusting, solid synthetic anionic organic detergent of the class consisting of sulfates and sulfonates and about 1.25% to about 12.5% by weight, based on total solids content, of a condensate of from 1 to 25 moles of ethylene oxide with 1 mole of phenol. Also claimed is a detergent composition in particle form comprising a normally-dusting, solid synthetic anionic organic detergent of the class consisting of sulfate and sulfonates and a sufficient amount of a phenol-ethylene oxide condensate to reduce the M. A. S. dust value of said detergent to less than 1000, said phenol-ethylene oxide condensate containing from 1 to 25 moles of ethylene oxide per mole of phenol.

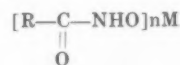
No. 2,742,435. Process for Preparing Detergent Compositions, patented by Edwin O. Korpi and David D. Whyte, Cincinnati, Ohio, assignors to The Procter & Gamble Co., Cincinnati. The patent reveals a process

for preparing wetting, sudsing and detergent agents having improved anti-caking properties when in small solid particle form. The method comprises sulfonating a material selected from the group consisting of high molecular weight alkyl and alkyl-aryl compounds, all containing at least 8 carbon atoms in the alkyl chain, with a sulfonating agent selected from the group consisting of oleum, free SO₃, sulfuric acid and mixtures thereof, the amount of said sulfonating agent being sufficient to give the desired completeness of reaction and such that the acid mixture from the said sulfonation contains from about 90 to 99% strength sulfuric acid, thereafter admixing the said acid mixture with a low molecular weight monohydroxy alcohol having not more than 6 carbon atoms and effecting reaction between said alcohol and the excess acid in the said acid mixture, allowing the reaction to proceed to substantial completeness without the formation of over-sulfation products, while restraining the temperature from rising substantially above 125°F., whereby residual sulfonating power of the excess acid from the primary sulfonation reaction is utilized, the said alcohol being added in an amount adequate to the formation upon sulfonation of an amount of lower alkyl sulfate sufficient to impart anti-caking properties to the final product, and thereafter substantially neutralizing any remaining excess acid with an alkaline material and drying to solid granular form an aqueous mixture containing said reaction products.

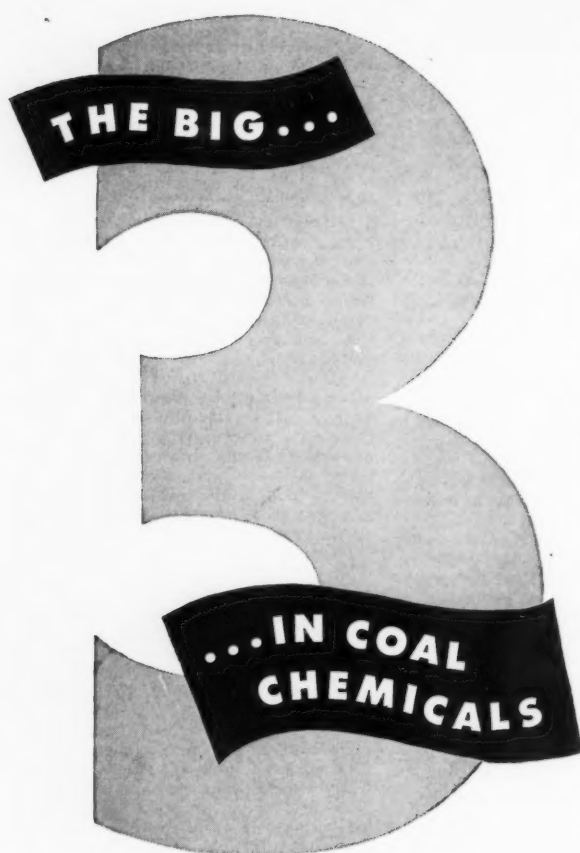
No. 2,733,215. Cleaning Compositions Containing Tarnish Inhibitors, patented by Edgar E. Ruff, Bergenfield, N. J., assignor to Lever Brothers Company, New York. The patent covers a cleaning composition comprising a water-soluble polyphosphate which in aqueous solution tarnishes copper and copper and nickel alloys and a tarnish inhibitor in an amount to lessen the tarnishing action of the polyphosphate and having the general formula:



where M is selected from the group consisting of hydrogen and a metal, R is an aliphatic hydrocarbon radical having from seven to seventeen carbon atoms, and n is the valence of M. Also patented is a non-soap detergent composition comprising an active detergent selected from the group consisting of anionic and nonionic detergents which in aqueous solution tarnishes copper and copper and nickel alloys and a tarnish inhibitor in an amount to lessen the tarnishing action of the detergent and having the general formula:



where M is selected from the group consisting of hydrogen and a metal, R is an aliphatic hydrocarbon radical having from seven to seventeen carbon atoms, and n is the valence of M.



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SOAP and CHEMICAL SPECIALTIES

Risdon Advances Beard

Appointment of Walter C. Beard, Jr., to the newly created post of director of research was an-



Walter C. Beard, Jr.

nounced last month by Risdon Manufacturing Co., Naugatuck, Conn. Mr. Beard joined Risdon in 1949, became manager of the valve division in 1951. In his new position he supervises the development of new product lines and continues to devote himself to valves and processes for pressure packaging.

F. Pollnow Jr. Heads Firm

Frank J. Pollnow, Jr., was named president of Vestal Inc., St. Louis Mo., it was announced in May. He succeeds his father, Frank J. Pollnow, Sr., founder of the firm who remains active as chairman of the board. Prior to his recent advancement the new president was executive vice-president of the firm. He is chairman of the industrial division of the Association of American Soap and Glycerine Producers, and a past director of the Chemical Specialties Manufacturers Association.

Except for service in the Navy Mr. Pollnow has been associated with Vestal since his graduation from the University of Notre Dame in 1942. Before he was appointed executive vice-president he had served as plant manager, re-

search director and technical director.

Mr. Pollnow broke his kneecap last month and returned to the office on crutches May 28.

Poisons Law Revision

Revision No. 6 of the "Compilation of Economic Poisons Laws" was published recently by the Chemical Specialties Manufacturers Association. One copy was mailed free to the official listed representative of each member company. Additional copies are available at \$5.00 each to members and \$10.00 per copy to non-members.

Richmond Quortrup Dies

Richmond C. Quortrup, 57, assistant manager of the chemical sales department of Barrett Division, Allied Chemical & Dye Corp., New York, died May 25 at Manhasset Medical Center, after a long illness.

Mr. Quortrup spent his entire business life with Barrett, starting as an office boy in 1917 after graduating from high school. He studied chemistry at Columbia University, Pratt Institute, and Brooklyn Polytechnic Institute, taking a course of night study covering a period of six years.

Having worked in the Barrett traffic and accounting departments he transferred to the chemical sales department in February, 1922. In 1935 he was appointed assistant manager of the chemical sales department, a position he held until illness forced him to retire.

Residue Tolerances Set

Residue tolerances for aldrin, dieldrin, and endrin were announced recently by the Food and Drug Administration and are illustrated on a chart issued by Shell Chemical Corp., New York.

New labels covering the greatly extended uses under the new

official ruling have been prepared by Shell for registration and will be available shortly.

Richardson Plant Manager

F. E. Richardson has been advanced to manager of the Memphis plant of Velsicol Chemical



F. E. Richardson

Corp., Chicago, it was announced in May by W. K. McCready, director of manufacturing. With the firm since 1948 Mr. Richardson held the post of assistant plant manager since last November.

Germany Lowers Duties

Germany has lowered temporarily import duties on 120 categories. Included are disinfectants, insecticides, antiseptics, weed-killers, fungicides and related products, not including certain agricultural insecticides based on sulfur, copper alloys or organic mercury compounds.

Schwarz to CCRC

Appointment of Milton Schwarz as director of sales and product development for Connecticut Chemical Research Corp., Bridgeport, was announced recently by A. O. Samuels, president. Mr. Schwarz had been associated with Turner-Hall Corp., Hoboken, N. J., and New York, for a period of ten years, most recently as technical director and assistant to the president. He holds a number of patents in the cosmetics field.

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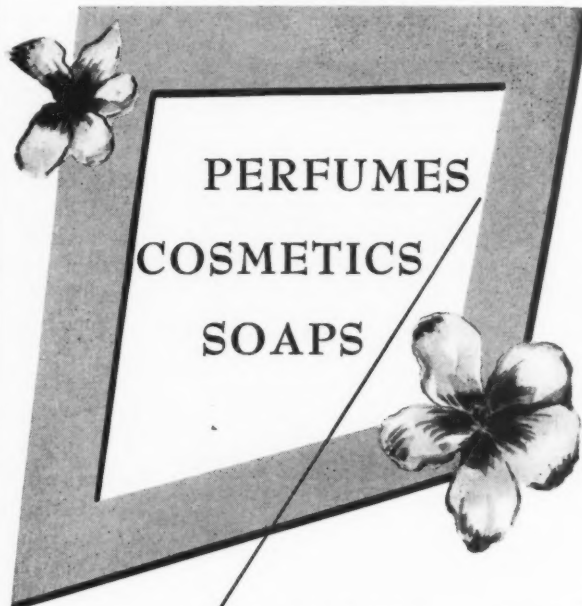
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SOAP and CHEMICAL SPECIALTIES

Mundy to Lehn & Fink

Roderick A. Mundy has joined Lehn & Fink Products Corp., New York, as assistant director of



Roderick A. Mundy

research, it was announced in May by Edward Plaut, president. For the past five years Dr. Mundy had been associated with the pharmaceutical research department of Johnson & Johnson, New Brunswick, N.J., where he served as group leader in charge of pharmaceutical formulations for the last two years.

In his new post Dr. Mundy assists Robert A. Prindle, director of the Lehn & Fink research and development laboratory. In addition he supervises the laboratory staff and oversees completion of product research and development projects.

Candy Drum Printing

Candy & Co., 2515 West 35th Street, Chicago, recently introduced a package decorating program which covers five-gallon pails and 15 to 65-gallon drums. For the basic painting or striping or screening of all these packages the customer can choose from 14 basic colors (including black). No screening is done on the 65 gallon drum.

A total of two or three colors can be used on drums and pails, which results in very close resemblance to lithographed containers. Drums and pails can be decorated to match and form sets. Cost of this type of decorating is higher per package than the cost for lithographed packages exclusive of orig-

inal plate cost, Candy says. At the same time the system offers to the average size distributor of a private branded product certain advantages: Expense for the color plate is eliminated and there is no need to buy large minimum quantities of each size container, cutting initial investment and storage space requirements.

Candy has issued a brochure presenting its drum and pail decorating and screening service to private brand customers. The brochure includes a color photograph giving an impression of the good looking packages turned out by the new department and a color guide as well as a price list. Some sound advice is included for the selection of artwork and colors intended to help the distributor about to adopt a screen decorated package.

Aerosol Deodorant Sales

Sales of aerosol anti-perspirants will climb 150 percent over last year's during the current summer months, it was predicted recently by Douglas Atlas, vice-president of G. Barr & Co., Chicago, private label aerosol manufacturers. Mr. Atlas also foresees a year round increased share of the entire deodorant market. Last year 2,000,000 aerosol anti-perspirant units were sold accounting for about three percent of the entire market in retail dollars. Introduced only 16 months ago, the product is expected to sell at the rate of 5,000,000 units this year, which would represent about seven and one half percent in retail dollars of all deodorant sales.

Washroom Pamphlet

"Clean Washrooms — The Key to Good Public Relations" is the title of a new pamphlet published recently by U.S. Sanitary Specialties Corp., Chicago. The bulletin stresses the importance of sanitary and attractive washrooms as a factor in public and employee relations and describes some of the products manufactured for that purpose by U.S. Sanitary Specialties.

Dinhofer to Sandoz

Joseph Dinhofer has been named manager of the laundry and dry cleaning department of Sandoz



Joseph Dinhofer

Chemical Works, Inc., New York, it was announced last month by Rudolph Lindenmaier, vice-president in charge of the chemical division. The marketing of a raw crypto-anionic detergent called "Sandozan DTC" will be Mr. Dinhofer's major responsibility in his new post. The product is used as a textile detergent and in a number of specialized applications such as removal of ink from waste paper stock.

Prior to joining Sandoz, Mr. Dinhofer was associated with Wallerstein Co., New York, as a field and sales representative in the New York area.

Morpholine Data

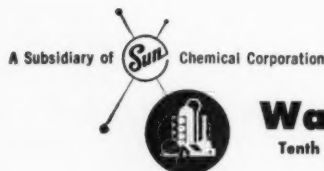
A new technical bulletin on N-substituted morpholine derivatives was published recently by Carbide and Carbon Chemicals Co., New York. Uses and potential applications, physical and physiological properties, and shipping data are offered. Included are N-methyl morpholine, N-ethyl morpholine, N-(3-aminopropyl) morpholine, as well as N-phenyl morpholine. Among other uses the compounds are effective stabilizers for chlorinated solvents and are used in the preparation of self polishing waxes, corrosion inhibitors, oil emulsions and other specialties.



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Adopts Larger Aerosol

The large 16 ounce pressure can made by American Can Co., New York, was adopted recently by Krylon, Inc., Norristown, Pa., for its line of clear spray coating and quick-drying enamels. In making the change the company dropped its 12-ounce size and is offering 35 percent more product at the same price charged for the discontinued size. The six-ounce size has been converted to Canco's double seamed style can. Introduced last fall the large Canco can features a high-dome top and concave bottom.

Old Empire Names Three

Old Empire, Inc., Newark, N.J., recently announced three appointments to its staff: Hans W. Maucher has been named sales manager, Robert A. Ehrlich a sales representative, and Paul Schmitt director of research and development in a consulting capacity.

Prior to his recent advancement Mr. Maucher was sales representative for Old Empire. Earlier he has been associated with Naugatuck Aromatics Division of U. S. Rubber Co., Naugatuck, Conn., and with Eberhard Faber Co.

Before joining Old Empire, Mr. Ehrlich was connected with Private Brands Inc., a Clifton, N.J., contract packaging firm. Later he established and operated Contract Packaging, Inc., Rutherford, N.J.

Dr. Schmitt served in the past as director of research of Lee Ltd., Beverly Hills, Calif. He has done much work on fragrances designed for use in pressure packaged products, which will prove useful in the expansion in the aerosol field planned by Old Empire. In addition, Dr. Schmitt will be consultant head of control and development for soap and bath specialties which the firm will supply to Colonia, Inc., distributors of "4711" colognes and toiletries.

At the same time purchase of a 20,000 square feet building for additional expansion in Newark was announced by Julio de Elorza, president of Old Empire.

Osmun Heads Purdue Dep't

John Vincent Osmun has been named head of the entomology department at Purdue University, Lafayette, Ind., effective July 1. Dr. Osmun joined the Purdue entomology staff as assistant professor in 1948, has been on leave for the past two years completing his work on his doctorate at the University of Illinois. He received his degree this month. Dr. Osmun succeeds J. J. Davis, head of the department since 1920, who retires July 1.

—★—

Rice Joins Tamms

Tamms Industries, Inc., Chicago, has appointed Loren T. Rice as sales representative for the state of Iowa, it was announced recently.

—★—

New Monsanto Researchers

Several members of the research department, organic chemicals division of Monsanto Chemical Co., St. Louis, Mo., were advanced to new positions, it was announced last month. Oliver W. Weinkauff, former associate director of research, has been appointed to the newly created position of director of technology. With Monsanto since 1931, Dr. Weinkauff will now be concerned with all aspects of technical problems within the division and with technical liaison with other divisions and research locations.


Harry W. Faust, an assistant director of research, has been named to the newly created post of assistant to the director of research. He will be responsible for coordinating the department's research activities in petroleum chemicals with related efforts within and outside the company. Mr. Faust joined Monsanto in 1929.

Ralph H. Munch, former research section leader, has been advanced to assistant director of research. He joined the company in 1937.

Kenneth L. Godfrey and James O. Harris have been appointed research section leaders at the division's Nitro, W. Va. facilities.




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Pest Control Data

A number of publications dealing with the control of insect pests in the household and on livestock have been published by the Department of Agriculture, Ottawa, Canada. Orders should be addressed to the information service of the department.

— ★ —

Sterwin Names Stromstad

Sterwin Chemicals, Inc., New York, has reassigned Norton J. Stromstad, mid-west sales representative, to a newly-created position in the same territory, it was announced recently by Robert S. Whiteside, president.

Since 1945 Mr. Stromstad has been associated with the distribution of Sterwin's quaternary ammonium compounds to various industries. In his new capacity, he will be a special representative on behalf of "Roccal," Sterwin's sanitizing agent. He will call on state, county and municipal health departments in nine states, including Minnesota, Wisconsin, North and South Dakota, Iowa, Illinois, Indiana, Ohio and Michigan.

The reassignment of Mr. Stromstad was prompted by the recent action permitting the use of quaternary ammonium compounds as sanitizing agents in milk plants. In addition, he will service Sterwin distributors in the sanitary chemical field.

Mr. Stromstad will continue to make his headquarters in Minneapolis.

Norton Stromstad



Two FMC Appointments

Two appointments were announced last month by the chemical divisions of Food Machinery and



Arthur S. Weygandt

Chemical Corp., New York: Arthur S. Weygandt becomes manager of the central development department and William D. Morrison has been named to the newly created post of manager, foreign chemical development.

Prior to joining FMC Mr. Weygandt was associated with E. I.

du Pont de Nemours & Co., Wilmington, Del. Among various assignments he held the post of technical director and was on the board of



William D. Morrison

Duperial Argentina, a joint operation of du Pont and Imperial Chemical Industries, Ltd., London.

Mr. Morrison has held various development posts with Celanese Corp. of America, New York, before going with FMC. In his new position he is responsible for new commercial opportunities abroad.

Galer & Hults Relocates

Galer & Hults, Inc., Philadelphia sanitary supply jobber, moved to new quarters at 22 W. Hortter St., Philadelphia, Apr. 1, it was announced recently by H. E. Galer, Jr., president. The firm's new building has showroom, warehouse and office facilities. Galer & Hults formerly was headquartered at 410 E. Mechanic St., Philadelphia.

— ★ —

Congo Pyrethrins Plant

Pyrethrum growers in the Belgian Congo and Ruanda: Urundi have signed a contract for a \$500,000 plant to process before the end of 1957 all flowers not otherwise extracted locally. This project was announced last month by African Pyrethrum Development, Inc., New York. The growers subscribed the entire capital of Kivu Agricultural Products Processing Co. (TRA-PAK). The new plant will be constructed by a Belgian company on a site near Goma. Plans call for capacity to handle six and one half tons of flowers per day.

Announcement of the TRA-PAK plans in the Congo came just a few weeks after news of similar plans from British East Africa, comprising Kenya, Tanganyika, and Uganda. The British and Belgian African producers supply the bulk of pyrethrum needs in the United States, which are expected to call for about 4000 tons of flowers, or 65 percent of total production, in 1956.

Some extraction of pyrethrins is currently being done by a privately owned plant in Nairobi, Kenya. The new project in Nakuru, Kenya, and in Goma, added to the privately owned operations at Nairobi and another private plant currently being completed in the Congo are said to follow plans approved by American importers who now extract pyrethrins in the United States. A possible doubling of United States demand for African pyrethrum by 1960 is seen by trade sources.

Peterson of Tamms Dies

T. J. Peterson, 82, president of Tamms Industries, Inc., died May 4 at his home in Evanston, Ill. Mr. Peterson established Tamms Silica Co., in 1911 and headed the company in the succeeding 45 years of growth and expansion. The firm name was later changed to Tamms Industries.

— ★ —

Dow Managerial Changes

J. W. Britton has relinquished his duties as departmental production manager in the Midland Division of Dow Chemical Co., Midland, Mich., to devote full time to company-wide responsibilities as manager of agricultural chemicals, it was announced recently. Ralph F. Prescott succeeds Mr. Britton as departmental production manager and as a member of the Midland Division operating board.

For the past 12 years Mr. Britton has been departmental pro-

duction manager and for seven years he has combined with this post the duties of manager of the agricultural chemicals section. Under the new arrangement Mr. Britton will devote his full time to all phases of the latter. He has been with Dow since 1923.

Associated with Dow since 1928, Mr. Prescott has served as assistant departmental production manager since 1949.

— ★ —

Internat'l Entomology Meet

The 10th International Congress of Entomology will be held August 17-25 at McGill University, Montreal, Canada. Concurrently with the congress there will be an exhibit of scientific equipment, spray and dusting equipment, insecticides, and pertinent literature. Anyone interested may communicate with the secretary of the congress, at the Science Service Building, Ottawa, Ontario, Canada.

Plaut in Europe

Edward Plaut, board chairman and president of Lehn & Fink Products Corp., New York, maker of "Lysol" disinfectant, is presently visiting Europe on an inspection tour of Lehn & Fink overseas plants.

New Avmor Liquid Wax

Avmor Ltd., Montreal, has introduced a new self-polishing liquid wax tradenamed "Glo-Mor Liquid Wax No. 21," it was announced recently by A. Morrow, president.

The new wax is said to have a solids content of 18 to 20 percent. Avmor claims it is waterproof, gives a high luster to floors and contains an anti-skid factor. "No. 21" is designed for use on linoleum, asphalt tile, rubber, vinyl, cement, terrazzo, cork and finished wood floors. Further information is available on request to Avmor Ltd., 431 St. Helen St., Montreal, Quebec, Canada.

Reilly Appoints Mittle

Frank L. Mittle recently was named sales manager of the Chemical Specialties Division of



Frank L. Mittle

Reilly Tar & Chemical Co., Indianapolis. The new division will handle sales of paints, protective coatings and tar pads. Mr. Mittle comes to Reilly from the Minnesota Platon Corp., Pipestone, Minn. He formerly was associated with the Clinton Co., Minneapolis, and the Minneapolis Division of the Texas Co.

High Purity Palmitic

Armour and Co., Chicago, recently introduced "Neo-Fat" 16, a high purity palmitic acid. With a palmitic content of 95 percent, the product is said to be the purest palmitic acid offered commercially. Good color and minimum iodine value are claimed for the product.

Aerosol Survey

(From Page 157)

The report accompanying the survey figures also indicates that further individual product classifications will be set up as sales volume in these groups increases.

In addition to total sales figures submitted by aerosol fillers, figures on aerosol valves and cans were submitted by producers of those materials. The 1955 aerosol can totals, which are not broken down by sizes, were 257,302,333.

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The total number of aerosol valves sold in 1955 was 245,004,122. These figures are included as a check on the overall accuracy of the survey figures. All survey figures given are a projection of the total sales of finished aerosol products. The aerosol sales figure based on those fillers reporting to Ernst & Ernst is 236,783,520 for 1955. As was mentioned earlier, these figures are based on replies submitted by 65 of 116 aerosol fillers. The difference between the reported total of 236 million units and the 240 million units sold in 1955 shown in the survey as the total is a projection of the committee. Also, based on previous estimates and a general knowledge of the prices of aerosol products on the retail market, it was estimated that the total retail value of aerosol products sold in 1955 was approximately \$250 million.

Other members of the committee included Al Pero, Fluid Chemical Co., Newark, N. J.; Frank Hormann, A. Schrader's Son, Brooklyn, and William Sherry, General Chemical Division, Allied Chemical & Dye Corp., New York.

The 1955 survey also shows, in addition to figures on high pressure, 12-ounce and more and six ounce and less metal containers, the number of units of various classes of products packed in all sizes of glass. Thus, 500,000 glass aerosol containers of mothproofers were sold in 1955; the same number was used for "Other Household Products"; 8,854,831 "Other Personal Products" were packed and sold as glass aerosols; 357,705 medicinals and pharmaceuticals and 9,771 miscellaneous products.

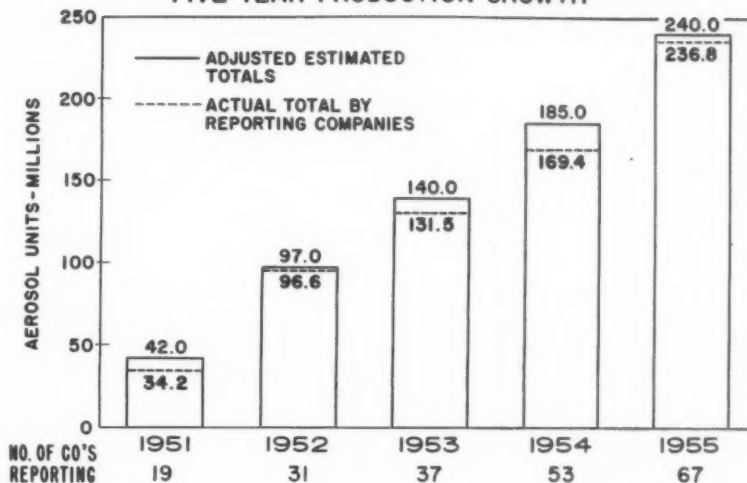
— ★ —

Bobrick Names Analab

Bobrick Dispensers, Inc., Los Angeles, has appointed Analab Laboratories, Inc., Boston, to serve as Bobrick's New England distributor, it was announced recently by James Puleo, vice-president of the Eastern Division of Bobrick. Analab will carry a complete stock of Bobrick liquid, lather and powdered soap dispensers.

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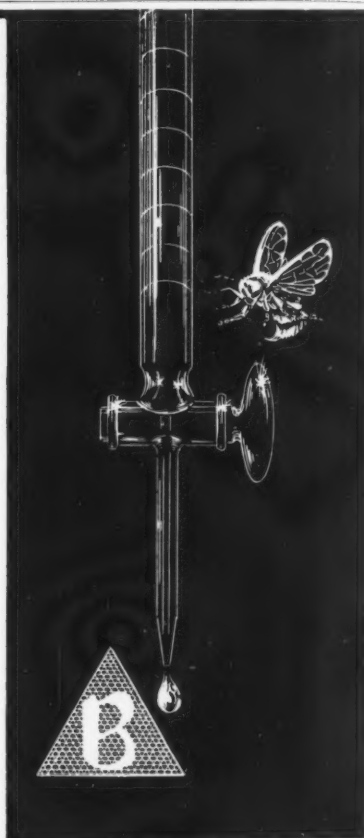


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CSMA Meeting

(From Page 169)

Changes in Interstate Commerce Commission regulations applying to the shipment of aerosols that are not only "unnecessary but are, in fact, hampering" the marketing of aerosols were suggested by Mr. Campbell. The Bureau of Explosives, he said, feels "obliged to recommend to the Commission that certain changes be made to eliminate those restrictions."

Mr. Campbell also suggested that aerosol marketers, through C.S.M.A., adopt some standard means of marking inside containers so as to indicate clearly which are flammable and which are not, even to the point of setting up a model law and promoting its adoption by cities or local regulatory bodies having laws governing such matters.

"To correct the inconsistencies which presently exist in the I.C.C. regulations, we would suggest cancelling all references to pressurized flammable liquids, including the definition, the exemption paragraphs and the packaging requirements," Mr. Campbell said.

He also stated: "The regulations presently carry restrictions relative to packaging of aerosols which are flammable compressed gases, basing restrictions upon the degree of flammability which is determined by tests referred to in the definition. Actually, the results of these tests will vary for identical products, dependent upon the orifice through which they are sprayed. In transportation, it is inconceivable that these aerosols would actually be sprayed from the containers so as to create any conditions similar to the test conditions. Therefore, these methods are unrealistic and not indicative of transportation hazards. To correct these conditions, we would suggest that . . . these tests for flammability be retained but that varying provisions based on degree of flammability be eliminated and that all materials classed as flammable under the definition be authorized for shipment when packed in accordance with the present provisions of section 73.306(d) (1) and (2).

"To eliminate further inconsistencies, we would suggest that at a future date all the regulations applying to the transportation of aerosols, both exemptions and packaging requirements, be reviewed with a view toward simplification."

Mr. Campbell prefaced his recommendations for changes in the I.C.C. regulations by pointing out that both the Bureau of Explosives and the C.S.M.A., its members and producers of propellants and containers, work closely in the development of regulations to provide safety in transportation. He stated that long before aerosol sales had reached their present levels there were regulations governing the transportation of compressed gases, which were worded to prevent the transportation of such gases in metal cans of any type. As a result, special permits had to be issued in the early days of aerosols to permit such products to be shipped in cans, even though some of the materials involved would not present any hazard in transportation. Eventually the regulations were amended to exempt certain aerosols from packaging, marking and labeling requirements. Because aerosols were so new and it was impossible to foresee how their sales would grow phrasing exemptions to take care of all situations was out of the question.

"It is doubtful that even today we could write regulations which will fully contemplate the requirements of (aerosol) five years from now," Mr. Campbell stated.

He pointed out that we have had enough experience now to know that "none of the present-day aerosols and aerosol products, when prepared in the manner now employed . . . present any appreciable hazard in transportation and such hazard as they do present can be brought into practicable and safe limits by restricting the quantity of material which may be packed in any individual inside container by the imposition of certain simple test requirements and by the imposition of pressure limits.

"While we have no exact figures, we are sure that literally millions of aerosols in can-type containers have been shipped and we have no record of any accident resulting in injury to persons or seri-

ous damage to property as a result of such transportation."

Insecticide-Disinfectant

AT the May 22 afternoon joint session of the insecticide and the disinfectant and sanitizers divisions, Dr. A. D. Hess of the Public Health Service's Logan, Utah, field station declared that the problem of controlling insects of public health importance is not decreasing, but rather growing more serious.

This, he said, is due in part to faulty environmental sanitation practices which increase potential breeding sources of insects, and in part to the insect resistance problem. The problem of controlling insect-borne virus diseases, he said, has tremendously increased with the expansion of irrigation systems. In one area, he stated, there was a 1,000 percent increase in encephalitis since the start of an irrigation project there. Encephalitis, he declared, is the most important arthropod-borne disease in this country and the solution must be based on improved sanitation practices.

Nothing should be taken for granted, Dr. Hess went on, merely because a disease is supposed to have been eradicated. Although malaria has been "conquered" there is always the possibility that it will get a start from returning soldiers who carry the parasite. Yellow fever is supposed to be a thing of the past, but in Trinidad, which had not had an outbreak in 40 years, it suddenly appeared in 1954. Continuing, Dr. Hess discussed problems of controlling insect vectors of disease from flies of every type, to midges, fleas, ticks, mites, and also rodents and wild sylvan populations.

Chemical control of disease-causing insects, Dr. Hess declared, is not the sole answer to the public health problem. Attention should first be given to good sanitation practices. This should bring the insect population down to the point where insecticides can take over to handle the pests. He suggested, too, additional research on the biology and ecology of insects.

Wm. H. Kelly, regional director, Small Business Administration, Chicago, followed with an exposition of the objectives and services of this, the first governmental peacetime agency created to help the nation's four million small business concerns. In some detail he outlined procedures by which chemical specialty manufacturers can obtain a share of the \$900 million in government contracts that have been reserved for exclusive award to small firms.

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ments for insecticides and disinfectants under the Federal Insecticide, Fungicide and Rodenticide Act were reviewed by CSMA's counsel, John D. Connor Washington, D. C., and the session was concluded with a discussion of precautionary labeling requirements presented by Dr. A. Haldane Gee of Foster D. Snell, Inc., New York.

Floor Finish Tests

A preliminary evaluation of resinous floor finishes on the basis of performance was reported on by James B. Snider, Standardization Division, Federal Supply Service, Washington, D.C. On light colored asphalt with heavy traffic these finishes were found acceptable for government use, with some products super-slip resistant, and a few unacceptable. Generally the products were found to be non-buffable, although they varied appreciably in initial gloss. A decrease in gloss after the first 24 hours was noted. Gloss appeared to be retained longer by use of treated mops than by damp mopping. Rating dirt retention, one group showed an over-all grayness due possibly to powder-

ing or chalking. Another group showed the familiar long black marks, and a third group showed small scuff marks with little or no tendency to powder off. Considering both gloss and dirt retention under the category of general appearance, there was noted a wide swing, with some products possibly having sufficient merit to warrant further consideration.

On black asphalt tile, a representative number of products was found acceptable for government use as far as slip-resistance was concerned with a few being super slip-resistant. Products varied appreciably in initial gloss, with a few being so deficient as to be unacceptable. Gradual increase in gloss was noted on some panels with each successive examination. Because black tile was used, dirt retention, a factor in general appearance, was impossible to evaluate. However, scuff marks and scratches were discernible.

Examination in two other categories, terrazzo and durability tests, were not completed.

Standard Oil Co., New York, was chairman of the insecticide survey committee, whose members also included Dr. Alfred Weed of John Powell & Co., division of Olin Mathieson Chemical Corp., Baltimore; Richard Both, Carlos Kampmeier, Rohm & Haas Co., Philadelphia, chairman of the Insecticide Division Administrative Committee, and John Rodda, Fairfield Chemical Division, Food Machinery & Chemical Corp., Baltimore, vice-chairman.

Insecticide Survey

(From Page 163)

spray packages of one gallon and under were sold in 1954, as compared with 43,179,000 aerosol and pressurized packages of insecticide products reported in the CSMA survey of aerosol sales. In addition, several million packages of non-spray materials were sold.

George W. Fiero of Esso

Table III. Total Number of Packages Sold

Type of Spray	1951	1952	1953	1954	1955
Space				C	
DDT	12,466,339	11,528,390	10,883,303	12,202,248	11,690,315
Chlordane	11,290,684	13,394,247	12,817,313	14,885,982	20,588,660
Fabric Pest	147,785	2,035,570	1,813,858	1,191,026	722,577
Livestock (Oil)	957,769	1,123,870	958,575	963,439	1,053,217
Livestock (Conc.)	569,961	581,492	408,295	337,524	549,533
Other Emul. Conc.	807,443	967,963	238,270	276,607	214,310
Non-Emul. Conc.	3,382	3,994	89	60,731	6,050
Stored Grain	32,236	27,669	9,849	48,394	17,352
Total	36,434,939	40,445,936	38,883,152	42,668,581	44,717,343



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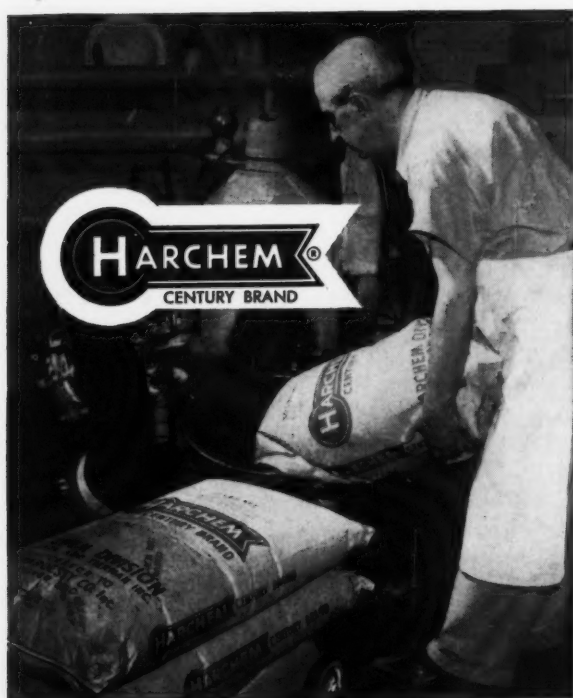
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**C-866 Liquid
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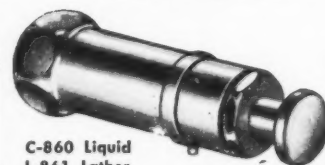
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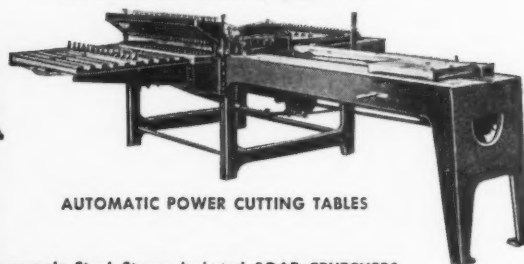
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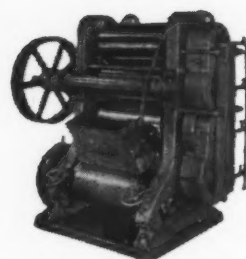
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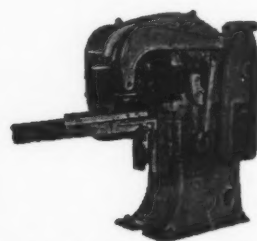
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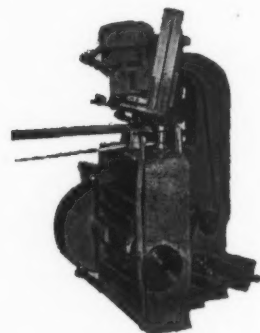
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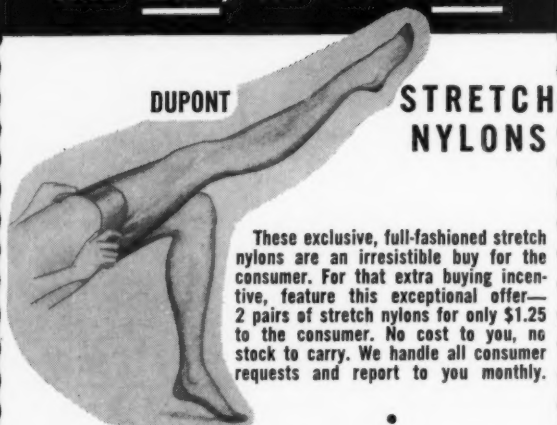


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(Continued on Page 203)

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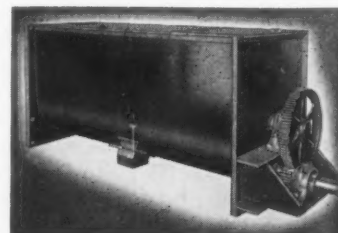
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576 Pages of practical information; history, testing & uses of disinfectants, household & industrial insecticides, floor products, soap specialties, etc. See page 152.

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For Sale: Used 18 spout rotary vacuum filler with chain conveyor and all parts. For ½ gallon and 1 gallon rectangular can. Excellent condition. 250 gallon stainless steel bottom agitator mixing tank complete. Demonstrator. Excellent condition. Filpaco Industries, Inc., 2426 South Michigan Ave., Chicago 16, Ill.

Standard Reference Books
See Page 206

Fowler Prentox Sales Rep.

W. J. Fowler of Whitaker Oil Co. has been named sales representative for "Prentox" household and industrial insecticide concentrates, including "Rax" rodenticide powder, in Georgia, Alabama, and Florida, it was announced in May by Prentiss Drug & Chemical Co., New York.

Mr. Fowler makes his headquarters in Atlanta, where warehouse stocks of "Prentox" products are being maintained.

Michigan's Earnings Up

Michigan Chemical Corp., Saint Louis, Mich., recently announced a gain of 57 percent in earnings during the first quarter of this year compared with the same period of last year. In the 1956 period earnings totaled \$52,363 compared with \$33,250 for the first three months of 1955.

Sales for the first quarter of 1956 were \$1,489,282 against \$1,588,629 in 1956. On the 537,077 shares of common stock outstanding, earnings per share were 10 cents in 1956 and six cents in '55.

Jack M. Varley Weds

Jack Mason Varley, eldest son of Jack C. Varley, president of James Varley & Sons, Inc., St. Louis, wed the former Miss Patricia Claire Rogers on June 9 in Coral Gables, Fla. The bride is the daughter of Mr. and Mrs. Howard Henry Rogers. Mr. Varley was graduated earlier this month from the University of Miami in Coral Gables.

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Pennsalt Mexican Plant

Pennsylvania Salt Manufacturing Co., Philadelphia, recently announced completion of its new plant in Navojoa, Sonora, Mexico. This plant in northwestern Mexico expands and supplements the facilities of Pennsalt de Mexico's central plant and offices located in Mexico City and forms another base for the eventual distribution of the firm's full line of more than 400 chemicals in this area. Minerales y Metales Industriales, another Mexican subsidiary, completed last month its first year of fluorspar mining activities in the San Luis Potosi area.

Cosmetic Chemists Meet

(From Page 54)

is of great importance since certain substances may be very active in aqueous solution and be partially or completely inactivated by the abrasive and other ingredients present in the tooth paste formulation. The question of compatibility is one of the

major problems in the choice of caries- preventive agents. Tyrothricin is the most hopeful of the antibiotic substances under consideration, and one quaternary ammonium compound appears promising. To determine the value of the laboratory method in predicting effectiveness it must be correlated with the results of clinical studies. The accumulation of such data for the "Modified Casein Test" is in progress.

Other papers presented at the semi-annual technical meeting included: "The Behavior of Perfume Materials in Thioglycolate Solutions" by Edward Sagarin and Marvin Balsam, Standard Aromatics, New York; "A New Permanent Waving Process" by Raymond E. Reed, Toni Co., Chicago; and "The Analysis of Lipsticks" by Paul W. Jewell, Max Factor & Co., Hollywood, Calif.

At luncheon George P. Larrick, commissioner, U. S. Food and Drug Administration and Walter B. Shelley, associate professor of der-

matology at the University of Pennsylvania, received tributes from the society. Mr. Larrick became an honorary member in the Society of Cosmetic Chemists, an honor accorded to only seven other people since the group was founded in 1945. The scroll of honorary membership was presented to Mr. Larrick by George G. Kolar, president of the society. Stephen Mayham, executive vice-president of the Toilet Goods Association, introduced Mr. Larrick and outlined his professional merits and personal profile.

Dr. Shelley received the special award for distinguished literature in cosmetic technology. The citation and \$1000 prize were presented by Sabbat J. Strianse, president-elect of the society. Dr. Shelley was selected by the literature review committee on the basis of his research on apocrine and eccrine sweat glands. Dr. Shelley was introduced by Frederick D. Weidman, emeritus professor of dermatology at the Graduate School of Medicine, University of Pennsylvania.

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Coming Meetings

American Oil Chemists' Society, 47th annual fall meeting, Chicago, Sept. 24-26; 1956 short course, Purdue University, Lafayette, Ind., July 16-20.

American Public Health Association, 84th annual meeting, Convention Hall, Atlantic City, Nov. 12-16.

American Society for Testing Materials, Committee D-21 on Wax Polishes and Related Materials, Washington, D. C., Dec. 10.

Chemical Specialties Manufacturers Association, 43rd annual meeting, Mayflower Hotel, Washington, D. C., Dec. 3-5.

Entomological Society of America, annual meeting, Dec. 27-31, 1956, Hotel New Yorker, New York City.

International Sanitation Maintenance Show and Conference, New York Coliseum, Oct. 14-16.

National Association of Sanitarians, 20th annual conference and exposition, Morrison Hotel, Chicago, July 23-26.

National Motel Show, 3rd annual convention, at Morrison Hotel, Chicago, Oct. 29-31.

National Hotel Exposition, 41st annual show, Coliseum, New York City, Nov. 12-16.

National Packaging Exposition and Conference, International Amphitheatre, Chicago, April 8-11, 1957.

National Pest Control Association, 23rd annual convention, Sheraton Cadillac Hotel, Detroit, Oct. 22-25.

National Sanitary Supply Association, first western regional trade show and convention, Ambassador Hotel, Los Angeles, Nov. 25-29. Annual convention and trade show Conrad Hilton Hotel, Chicago, March 31, April 1, 2-3, 1957.

Packaging Machinery & Materials Exposition, Public Auditorium, Cleveland, Sept. 11-14.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, Sept. 11, Oct. 9, Nov. 7; annual meeting and dinner, Biltmore Hotel, New York, Dec. 3.

Western Packaging & Materials Handling Exposition, Pan Pacific Auditorium, Los Angeles, July 10-12.

Index to ADVERTISERS

Aerosol Process Co.	199	Glidden Co., The	194	Oronite Chemical Co.	18
African Pyrethrum Development, Inc.	137	Gross & Co., A.	3	Owens-Illinois Glass Co.	104, 105
American Cyanamid Co.	8	Hall Bros.	200	Pennsylvania Industrial Chem. Corp.	153
Andersen, Dr. Carl N.	199	Harchem Div., Wallace & Tiernan, Inc.	196	Pennsylvania Refining Co.	184
Argueso & Co., M.	190	Heine & Co.	16	Pennsylvania Salt Mfg. Co.	118, 119
Armour & Co.	66	Hercules Powder Co.	34	Peterson Filling & Packaging Corp.	170
Aromatic Products, Inc.	123	Hill Top Research Institute, Inc.	199	Philadelphia Quartz Co.	14
Atlantic Refining Co.	40	Hooker Electrochemical Co.	10	Pilot Chemical Co.	94
		Houchin Machinery Co.	78	Polak's Frutal Works, Inc.	33
		Hudson Laboratories, Inc.	197	Precision Valve Corp.	114
Bareco Wax Co., Div. of Petrolite Corp.	Facing 156			Price, Dr. Donald	197
Barr & Co., G.	101	Imperial Brass Mfg. Co.	196	Procter & Gamble Co.	29
Blockson Chemical Co.	32	Inland Steel Container Co.	106		
Bush & Co., W. J.	192	International Minerals & Chemicals Corp.	76	Rapids Machinery Co.	202
		Island Equipment Co.	90	Raymond Laboratories, Inc.	20
California Spray-Chemical Corp.	135			River Plate Corp., The	192
Candy & Co.	4	Jefferson Chemical Co.	62	Robeco Chemicals, Inc.	203
Carbide & Carbon Chemicals Co., Union Carbide & Carbon Corp.	174	Jones & Laughlin Steel Corp.	100	Rohm & Haas Co.	24, 168
Chemical Specialties Mfrs. Assn.	128			Roubechez, Inc.	186
Clybourn Machine Corp.	115	Kiefer Machine Co., The Karl	88	Roure-Dupont, Inc.	6, 7
Colgate-Palmolive Co.	12	Koppers Co.	182		
Columbia-Southern Chemical Co.	205			Seil, Putt & Rusby, Inc.	197
Commercial Solvents Corp.	130	Lancaster, Allwine & Rommel	197, 204	Shanco Plastics & Chemicals, Inc.	204
Continental Can Co.	108, Facing 114	Leeben Chemical Co., Inc., Interstate Color Co., A Division	205	Shea Chemical Corp.	188
Continental Filling Corp.	120	Lehmann Co., J. M.	82	Shell Chemical Corp.	140
Continental Oil Co.	15	Lewers, Dr. W. W.	197	Shulton, Inc.	98
Cowles Chemical Co.	64			Sindar Corp.	68
Cox, Dr. Alvin J.	199	Magnus, Mabee & Reynard, Inc.	136	Foster D. Snell, Inc.	191
Crown Cork & Seal Co., Can Division	102, 103	Mantrose Corp., The	178	Solvay Process Div., Allied Chemical & Dye Corp.	21, 149
		Manufacturers Aid Co.	197	Solvents & Chemicals Group, The	133
Deutsche Hydrierwerke, G. m. b. H.	200	Marchon Products, Ltd.	13	Starr, Dr. Donald F.	197
Diehl & Co., Wm.	203	Maryland Glass Corp.	110	Stepan Chemical Co.	19
Dodge & Olcott, Inc.	2nd Cover	Mathieson Chemical Div., Olin Mathieson Chem. Corp.	72	Stillwell & Gladding, Inc.	197
Dow Chemical Co.	25, 57	Mazzoni, S. p. A., G.	84		
Dreyer, Inc., P. R.	Facing 157	McCutcheon, J. W.	197	Tamms Industries, Inc.	202
du Pont de Nemours & Co., E. I.	17, 58, 172	McLaughlin Gormley King Co.	123	Thomssen, Dr. E. G.	197
Durez Plastics Division	125	Meccaniche Moderne	80	Tombarel Products Corp.	184
		Merchants Chemical Co.	9	Turner & Co., Joseph	194
Eastman Chemical Products, Inc.	166	Miranol Chemical Co., The	77		
El Dorado Division	182	Mixing Equipment Co.	86	Ungerer & Co.	3rd Cover
Emery Industries, Inc.	26	Molnar Laboratories	197	Union Carbide & Carbon Corp., Carbide & Carbon Chemicals Co.	174
Emulsol Chemical Corp.	129	Monsanto Chemical Co. Between 66 & 67		Union Standard Equipment Co.	201
Enjay Co.	31			U. S. Bottlers Machinery Co.	90
		National Aniline Division	22		
Fairfield Chemical Division	158	Neumann, Buslee & Wolfe, Inc.	204	van Ameringen-Haebler, Inc.	150, 151, 4th Cover
Felton Chemical Co.	23	Newman Tallow & Soap Mach'y Co.	198	Van Dyk & Co., Inc.	195
Florasynth Laboratories, Inc.	132	Ninol Laboratories, Inc.	11	Velsicol Chemical Corp.	156
Fluid Chemical Co.	176	Nitrogen Div., Allied Chemical & Dye Corp.	162	Verona Chemical Co.	92
Fritzsche Brothers, Inc.	74	Nopco Chemical Co.	96	Vulcan Containers Inc.	116
Fuld Brothers, Inc.	131	Norda Essential Oil & Chemical Co.	36		
		Northwestern Bottle Co.	Facing 115	Warwick Wax Co.	186
Geigy Industrial Chemicals	70	O'Donnell, James P.	197	Westvaco Chlor-Alkali Div.	38
General Chemical Div., Allied Chemical & Dye Corp.	126, 127	Oil Equipment Laboratories, Inc.	120	Westvaco Mineral Products Div.	59
Gesell, Inc., R.	200	Old Empire, Inc.	204	Wisconsin Alumni Research Foundation	202
Gillespie-Rogers-Pyatt Co.	160	Olin Mathieson Chemical Corp., Industrial Chemical Div.	72	Wurster & Sanger, Inc.	90
Givaudan-Delawanna, Inc.	60			Wyandotte Chemicals Corp.	27

Tale Ends

VAN Iderstine Co., Long Island City renderers, finally got Emily, Ringling Brothers-Barnum-Bailey circus elephant. While traveling across N. Y. en route to the railroad yards to be shipped to Boston, Emily up and died on the street effectively blocking traffic for several hours. It took a N. Y. Sanitation Department 10 ton wrecker to move her to the Van Iderstine plant where she was rendered into soap fat. At the moment we have no figures, and are somewhat curious to know the titre of elephant fat.

* * * * *

Moss Soap Co. formerly of St. Petersburg, Fla. has moved plant and office to Hialeah. This, according to Morrie Moss, the owner, is so their office will be closer to the famous race track. Now, we're not sure that Morrie isn't pulling our leg, but it could be real handy to slip across the street, place a couple of bucks on a nag and skip back to work. In case any of his friends in the trade want his new address, it's 2375 East 10th Ave., Hialeah, Fla.

* * * * *

Owners of the trade name, "Princess Pat" for women's toiletries have taken action against the users of the name, "Pat" for beard softening shave products, claiming possible confusion. The U. S. Court of Customs and Patent Appeals held that Pat, standing alone, has a masculine significance while Princess Pat is definitely feminine. Hence, no confusion. Princess Pat said that women use shave products. The Court, evidently horrified, said there was no evidence to support such a contention. And there they left it.

* * * * *

Another new and novel use for an aerosol,—as a device to whet the thirst of bourbon drinkers. At the recent National Sanitary Supply Show in Chicago, the Whitmire Research Laboratories of St. Louis handed out sample aerosols of room deodorant which smelled like bourbon whiskey and labeled "Old Fitzgerald" fragrance. Of course, the whole thing was a joke, but nevertheless the aroma of the aerosol is reputed to have worked up a thirst in many a bourbon drinker at the show.

* * * * *

Macy's famous N. Y. department store, ran an advertisement in one of the daily papers and accidentally the wrong phone number was put in the advertisement. It so happened that the wrong phone number was the right phone number for Givaudan-Delawanna. Well, according to Bob Horsey, Givaudan sales mgr., all hell broke loose on their telephone. Their switchboard was tied up in knots for the better part of a day, both incoming and outgoing calls being blocked by the horde of callers looking for one of Macy's bargains.

Spurious Product Co., that mythical outfit in the specialty field, headed by Bayard Johnson of Franklin Research and beheaded by Melvin Fuld of Fuld Bros., announces that it will hereafter offer an annual award starting this year to the man who has done the most to confuse the wax industry. However, according to Mr. Johnson, the thing may have to be abandoned this year because of the multiplicity of candidates for the honor.

* * * * *

We can't imagine a more hopeless feeling. Don Templeton of Stanley Home Products, en route from New England to Chicago to attend the CSMA convention, got his bag mixed up with that of a fellow en route to Japan and did not discover his error until he had arrived at the Hotel Drake with the wrong bag. No shirts, no underwear, no clothes, no nothin' for poor Don. Don finally headed off his bag before it got to Japan.

* * * * *

Just a short time ago, J. B. Williams Co., Glastonbury, Conn., received a letter from a man in Ashforth, England, requesting a free tube of shaving cream which the company had offered

in a magazine advertisement. He enclosed the clipped advertisement. It was from the NATIONAL GEOGRAPHIC MAGAZINE, issue of December, 1922. The company sent him the tube of shave cream as requested.

* * * * *

If we may judge from a report from the University of Oklahoma at Norman, Okla., the bedbug is vanishing from the American scene. It seems that Dr. Cluff Hopla of the university's department of biology is in sad need of bedbugs for study purposes and can't find any. He has promised students higher grades to bring in bedbugs. He says that improved chemical extermination methods have reduced our bedbug population to nil. Also, he adds, science has never pinned anything on this little old blood sucker. He suggested to his searching students that the best place to find bedbugs today is probably in chicken coops.

* * * * *

The building was festooned throughout the interior with deodorant cakes,—para cakes of all shapes and sizes hanging all over the place. They sure had an odor problem for when the police raided the joint, they found a 150 gallon still and 25 barrels of mash. Says the newspaper report of this Bronx raid, "... the sour smell of fermenting whiskey scored a decisive victory over the crisp antiseptic efforts of the deodorant."

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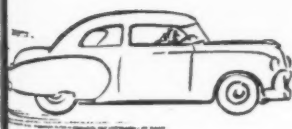
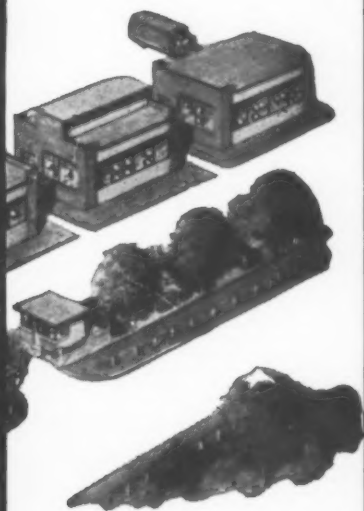
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